

SEQUENCE LISTING



<110> Innogenetics N.V.

<120> New sequences of hepatitis C virus genotypes for diagnosis, prophylaxis and therapy

<130> 35

<160> 284

<170> PatentIn version 3.1

<210> 1

<211> 213

<212> DNA

<213> hepatitis C virus

<400> 1

ctcacggaac ggctttactg cgggggcccct atgttcaaca gcaagggggc ccagtgtggt 60

tatcgccgct gccgtgccag tggagtcttg cctaccagct tcggcaacac aatcacttgc 120

tacatcaagg ccacagcggc tgcaagggcc gcaggcctcc ggaacccgga ctttcttgtc 180

tgccgagatg atctggctgt ggtggctgag agt 213

<210> 2

<211> 71

<212> PRT

<213> hepatitis C virus

<400> 2

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Arg Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 3

<211> 213

<212> DNA
<213> hepatitis C virus

<400> 3
ctcacggaac ggctttactg cggggggccct atgttcaaca gcaagggggc ccagtgtggt 60
tatacgccgct gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgc 120
tacatcaagg ccacagcggc tgcaagggcc gcaggcctcc ggaacccgga ctttcttgtc 180
tgccgagatg atctggctcg tggggctgag agt 213

<210> 4
<211> 71
<212> PRT
<213> hepatitis C virus

<400> 4
Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 5
<211> 213
<212> DNA
<213> hepatitis C virus

<400> 5
ctcacggagc ggctttactg cggggggccct atgtttaaca gcaagggggc ccagtgtggt 60
tatacgccgtt gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgt 120
tacatcaaag ccacagcggc cgcaaaagcc gcaggcctcc ggagcccgga ctttcttgtc 180
tgccgagatg atctggctcg tggggctgag agt 213

<210> 6
<211> 71

<212> PRT
<213> hepatitis C virus

<400> 6

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 7
<211> 213
<212> DNA
<213> hepatitis C virus

<400> 7
ctcacggagc ggcttttactg cggggggcct atgtttaaca gcaaaggggc ccagtgtggt 60
tatcgccgtt gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgt 120
tacatcaaag ccacagcggc cgcaaaagcc gcaggcctcc ggagcccga ctttcttgtc 180
tgcgagatg atctggctgt ggtggctgag agt 213

<210> 8
<211> 71
<212> PRT
<213> hepatitis C virus

<400> 8

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp
 50 55 60

Leu Val Val Val Ala Glu Ser
 65 70

<210> 9
 <211> 213
 <212> DNA
 <213> hepatitis C virus

<400> 9
 ctcacggagc ggctttactg cggggggccct atgttcaaca gcaagggggc ccagtgtggt 60
 tatcgccgtt gtcgtgccag tggagttctg cctaccagtt tcggcaacac aatcacttgt 120
 tacatcaagg ccacagcggc tgcaaaagcc gcaggcctcc ggaaccgga ctttcttgtt 180
 tgcggagatg atttggtcgt ggtggctgag agt 213

<210> 10
 <211> 71
 <212> PRT
 <213> hepatitis C virus

<400> 10

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
 20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
 35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
 50 55 60

Leu Val Val Val Ala Glu Ser
 65 70

<210> 11
 <211> 213
 <212> DNA
 <213> hepatitis C virus

<400> 11
 ctcacgggagc ggctttactg cggggggccct atgttcaaca gcaagggggc ccagtgtggt 60
 tategccggt gtcgtgccag tggagttctg cctaccagtt tcggcaacac aatcacttgt 120
 tacatcaagg ccacagcggc tgcaaaagcc gcaggcctcc ggaacccgga ctttcttggt 180
 tgcggagatg atttggtcgt ggtggctgag agt 213

<210> 12
 <211> 71
 <212> PRT
 <213> hepatitis C virus

<400> 12

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
 20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
 35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
 50 55 60

Leu Val Val Val Ala Glu Ser
 65 70

<210> 13
 <211> 541
 <212> DNA
 <213> hepatitis C virus

<400> 13
 cgctggcgct cctgtaggag gcgtcgcaag agcccttgcg catggcggtga gggcccttga 60
 agacgggata aatttcgcaa cagggaattt gcccggttgc tccttttcta tcttccttct 120
 tgctctgttc tcttgcttaa tccatccagc agctagtcta gagtggcgga acacgtctgg 180
 cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtatgagg ccgatgacgt 240
 tattctgcac acacccggct gtgtaccttg tgttcaggac ggtaatacat ctgcgtgctg 300
 gaccccagtg acacctacag tggcagtcag gtacgtcgga gcaaccaccg cttcgatacg 360
 caggcatgta gacatgttgg tgggcgcggc cacgatgtgc tctgctctct acgtgggtga 420

tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480
 aacgggtccag acctgtaact gctcactgta cccaggccat ctttcaggac accgaatggc 540
 t 541

<210> 14
 <211> 180
 <212> PRT
 <213> hepatitis C virus

<400> 14

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
 35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
 65 70 75 80

Ile Leu His Thr Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr
 85 90 95

Ser Ala Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Arg His Val Asp Met Leu Val Gly
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
 165 170 175

His Arg Met Ala
180

<210> 15
<211> 541
<212> DNA
<213> hepatitis C virus

<400> 15
cgtcggcgct cctgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60
agacgggata aatttcgcaa caggggaattt gcccggttgc tccttttcta tcttccttcc 120
tgctctgttc tcttgcttaa tccatccagc agctagtcta gagtggcgga acacgtctgg 180
cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtatgagg ccgatgacgt 240
tattctgcac acacccggct gtgtaccttg tggtcaggac ggtaatacat ctgcgtgctg 300
gacccagtg acacctacag tggcagtcag gtacgtcgga gcaaccaccg cttcgatacg 360
caggcatgta gacatattgg tgggcgcggc cacaatgtgc tctgctctct acgtgggtga 420
tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480
aacgggtccag acctgtaact gctcactgta cccaggccat ctttcaggac accgaatggc 540
t 541

<210> 16
<211> 180
<212> PRT
<213> hepatitis C virus

<400> 16

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
20 25 30

Cys Ser Phe Ser Ile Phe Leu Pro Ala Leu Phe Ser Cys Leu Ile His
35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
65 70 75 80

Ile Leu His Thr Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr
85 90 95

Ser Ala Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val
100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Arg His Val Asp Ile Leu Val Gly
115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
165 170 175

His Arg Met Ala
180

<210> 17
<211> 541
<212> DNA
<213> hepatitis C virus

<400> 17
cgctggcgct cctgtaggag gcgtcgcaag agcccttgcg catggcggtga gggcccttga 60
agacgggata aatttcgcaa cagggaattt gcccggttgc tccttttcta tcttccttct 120
tgctctgttc tcttgcttaa tccatccagc agctagtcta gaggggcgga acacgtctgg 180
cctctacgtc cttaccaacg actgttcaa tagcagtatt gtgtatgagg ccgatgacgt 240
tattctgcac acacccggct gtgtaccttg tgttcaggac ggtaatacat ctgcgtgctg 300
gaccccgctg acacctacag tggcagtcag gtacgtcgga gcaaccaccg cttcgatacg 360
caggcatgta gacatattgg tgggcgcggc cagcatgtgc tctgctctct acgtgggtga 420
tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480
aacggtccag acctgtaact gctcactgta cccaggccat ctttcaggac accgaatggc 540
t 541

<210> 18
<211> 180
<212> PRT
<213> hepatitis C virus

<400> 18

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
65 70 75 80

Ile Leu His Thr Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr
85 90 95

Ser Ala Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val
100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Arg His Val Asp Ile Leu Val Gly
115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
165 170 175

His Arg Met Ala
180

<210> 19
<211> 541

<212> DNA
<213> hepatitis C virus

<400> 19
cgctggcgct cccgtaggag ggcgcgcaag agcccttgcg catggcgtga gggcccttga 60
agacgggata aatttcgcaa caggggaattt gcccggttgc tccttttcta ttttccttct 120
tgctctgttc tcttgcttaa ttcattccagc agctagtcta gagtggcgga atacgtctgg 180
cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtacgagg ccgatgacgt 240
tattctgcac acaccgggt gcataccttg tgtccaggac ggcaatacat ccacgtgctg 300
gacccagtg acaactacag tggcagtcaa gtacgtcgga gcaaccaccg cttcgatacg 360
cagtcattgtg gacctattag tgggcgcggc cagcatgtgc tcagcgctct acgtgggtga 420
tatgtgtggg gccgtcttcc ttgtgggaca agccttcacg ttcagacctc gtcgccatca 480
aacgggtccag acctgtaact gctcgctgta cccaggccat ctttcaggac atcgaatggc 540
t 541

<210> 20
<211> 180
<212> PRT
<213> hepatitis C virus

<400> 20
Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
1 5 10 15
Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
20 25 30
Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
35 40 45
Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
50 55 60
Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
65 70 75 80
Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr
85 90 95
Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val

100

105

110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
 165 170 175

His Arg Met Ala
 180

<210> 21
 <211> 541
 <212> DNA
 <213> hepatitis C virus

<400> 21
 cgtcggcgct cccgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60
 agacgggata aatttcgcaa caggggaattt gcccggttgc tccttttcta ttttccttct 120
 tgctctgttc tcttgcttaa ttcattccagc agctagtcta gagtggcgga atacgtctgg 180
 cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtacgagg ccgatgacgt 240
 tattctgcac acacccggct gcataccttg tgtccaggac ggcaatacat ccacgtgctg 300
 gacccagtg acacctacag tggcagtcaa gtacgtcgga gcaaccaccg cttcgatacg 360
 cagtcatgtg gacctattag tgggcgcggc cacgatgtgc tctgcgtct acgtgggtga 420
 catgtgtggg gctgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480
 aacggtccag acctgtaact gctcgctgta cccaggccat ctttcaggac atcgaatggc 540
 t 541

<210> 22
 <211> 180
 <212> PRT
 <213> hepatitis C virus

<400> 22

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
 35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
 65 70 75 80

Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr
 85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
 165 170 175

His Arg Met Ala
 180

<210> 23
 <211> 541
 <212> DNA
 <213> hepatitis C virus

<400> 23
 cgctcggcgct cccgtaggag gcgtcgcaag agcccttgcg catggcggtga gggcccttga 60
 ggacgggata aacttcgcaa cagggaattt gcccggttgc tccttttcta tcttccttct 120

tgctctgttc tcttgcttaa tccatccagc agctggtcta gagtggcgga atacgtctgg 180
 cctctatgtc cttaccaacg actgttccaa tagtagtatt gtgtatgagg ccgatgacgt 240
 tattctgcac gcgcccggct gtgtaccttg tgtccaggac ggcaatacgt ctacatgctg 300
 gaccccgagta acacctacag tggcagtcag gtacgtcggg gcaaccaccg cttcgatacg 360
 cagtcatgtg gacctgttag taggcgcggc cacgatgtgc tctgcgcttt acgtgggtga 420
 tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacccc gccgccatca 480
 aacgggtccag acctgtaact gctcgtgta cccaggccat ctttcaggac atcgcatggc 540
 t 541

<210> 24
 <211> 180
 <212> PRT
 <213> hepatitis C virus

<400> 24

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
 35 40 45

Pro Ala Ala Gly Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
 65 70 75 80

Ile Leu His Ala Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr
 85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
 165 170 175

His Arg Met Ala
 180

<210> 25
 <211> 541
 <212> DNA
 <213> hepatitis C virus

<400> 25
 cgctggcgct cccgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60
 ggaaggata aacttcgcaa cagggaattt gcccggttgc tctttttcta tcttccttct 120
 tgctctgttc tcttgcttaa tccatccagc agctggtcta gagtggcgga atacgtctgg 180
 cctctatgtc cttaccaacg actgttccaa tagtagtatt gtgtatgagg ccgatgacgt 240
 tattctgcac gcgcccggct gtgtaccttg tgtccaggac ggcaatacgt ctacatgctg 300
 gacccagta acacctacag tggcagtcag gtacgtcggg gcaaccaccg cttcgatacg 360
 cagtcatgtg gacctgttag taggcgcggc cacgatgtgc tctgcgcttt acgtgggtga 420
 tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacccc gccgccatca 480
 aacgggtccag acctgtaact gctcgctgta cccaggccat ctttcaggac atcgaatggc 540
 t 541

<210> 26
 <211> 180
 <212> PRT
 <213> hepatitis C virus

<400> 26

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
 35 40 45

Pro Ala Ala Gly Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
 65 70 75 80

Ile Leu His Ala Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr
 85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
 165 170 175

His Arg Met Ala
 180

<210> 27
 <211> 541
 <212> DNA
 <213> hepatitis C virus

<400> 27
 cgctcgcgct cccgtaggag gcgtcgcaag agcccttgcg catggcggtga gggcccttga 60
 ggacgggata aacttcgcaa caggggaattt gcccggttgc tctttttcta tcttccttct 120
 tgctctgttc tcttgcttaa tccatccagc agctgggtcta gagtggcgga atacgtctgg 180
 cctctatgtc cttaccaacg actgttccaa tagtagtatt gtgtatgagg ccgatgacgt 240
 tattctgcac gcgcccggct gtgtaccttg tgtccaggac ggcaatacgt ctacatgctg 300

gaccccgagta acacctacag tggcagtcag gtacgtcggg gcaaccaccg cttcgatacg 360
cagtcagtgtg gacctgttag taggcgcggc cacgatgtgc tctgcgcttt acgtgggtga 420
tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacccc gccgccatca 480
aacggtccag acctgtaact gctcgctgta cccaggccat ctttcaggac atcgaatggc 540
t 541

<210> 28
<211> 180
<212> PRT
<213> hepatitis C virus

<400> 28

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly
20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His
35 40 45

Pro Ala Ala Gly Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val
65 70 75 80

Ile Leu His Ala Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr
85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val
100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly
115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala
130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln
145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly
165 170 175

His Arg Met Ala
180

<210> 29
<211> 287
<212> DNA
<213> hepatitis C virus

<400> 29
tagacttttg ggagagcgtc ttcactggac taactcacat agatgccac tttctgtcac 60
agactaagca gcagggactc aacttctcgt tcttgactgc ctaccaagcc actgtgtgcg 120
ctcgcgcgca ggctcctccc ccaagttggg acgagatgtg gaagtgtctc gtacggctta 180
agccaacact acatggacct acgcctcttc tatatcggtt ggggcctgtc caaaatgaaa 240
tctgcttgac acaccccatc acaaaaatata tcatggcatg catgtca 287

<210> 30
<211> 95
<212> PRT
<213> hepatitis C virus

<400> 30

Asp Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp Ala His
1 5 10 15

Phe Leu Ser Gln Thr Lys Gln Gln Gly Leu Asn Phe Ser Phe Leu Thr
20 25 30

Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser
35 40 45

Trp Asp Glu Met Trp Lys Cys Leu Val Arg Leu Lys Pro Thr Leu His
50 55 60

Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln Asn Glu Ile
65 70 75 80

Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met Ser
85 90 95

<210> 31
 <211> 401
 <212> DNA
 <213> hepatitis C virus

<400> 31
 tccaaaatga aatctgcttg acacaccccg tcacaaaata cattatggca tgcattgtcag 60
 ctgatctgga agtaaccacc agcacctggg tggttgcttg aggggtcctc gcggccctag 120
 cggcctactg cttgtcagtc ggctgcgttg taatcgtggg tcatatcgag ctgggggggca 180
 agccggcact cgttccagac aaggaggtgt tgtatcaaca gtacgatgag atggaggagt 240
 gctcgcaagc cgccccatac atcgaacaag ctcaggtaat agcccaccag ttcaaggaga 300
 aaatccttgg actgctgcag cgagccaccc aacaacaagc tgtcattgag cccgtaatag 360
 cttccaactg gcaaaagctt gaaaccttct ggcacaagca t 401

<210> 32
 <211> 133
 <212> PRT
 <213> hepatitis C virus

<400> 32

Gln Asn Glu Ile Cys Leu Thr His Pro Val Thr Lys Tyr Ile Met Ala
 1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu
 20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys
 35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Leu Val
 50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys
 65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln
 85 90 95

Phe Lys Glu Lys Ile Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln
 100 105 110

Ala Val Ile Glu Pro Val Ile Ala Ser Asn Trp Gln Lys Leu Glu Thr

115

120

125

Phe Trp His Lys His
130

<210> 33
<211> 401
<212> DNA
<213> hepatitis C virus

<400> 33
tccaaaatga aatctgcttg acacaccccg tcacaaaata cattatggca tgcattgtcag 60
ctgatctgga agtaaccacc agcacctggg tggtgcttgg aggggtcctc gcggccctag 120
cggcctactg cttgtcagtc ggctgcgttg taatcgtggg tcatatcgag ctgggggggca 180
agcgggcact cgttcagac aaggaggtgt tgtatcaaca gtacgatgag atggaggagt 240
gctcgcaagc cgccccatac atcgaacaag ctcaggtaat agcccaccag ttcaaggaga 300
aaatccttgg actgctgcag cgagccaccc aacaacaagc tgtcattgag cccgtaatag 360
cttccaactg gcaaaagctt gaaaccttct ggcacaagca t 401

<210> 34
<211> 133
<212> PRT
<213> hepatitis C virus

<400> 34
Gln Asn Glu Ile Cys Leu Thr His Pro Val Thr Lys Tyr Ile Met Ala
1 5 10 15
Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu
20 25 30
Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys
35 40 45
Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Leu Val
50 55 60
Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys
65 70 75 80
Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln
85 90 95

Phe Lys Glu Lys Ile Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln
 100 105 110

Ala Val Ile Glu Pro Val Ile Ala Ser Asn Trp Gln Lys Leu Glu Thr
 115 120 125

Phe Trp His Lys His
 130

<210> 35
 <211> 401
 <212> DNA
 <213> hepatitis C virus

<400> 35
 tccaaaatga aatctgcttg acacacccca tcacaaaata catcatggca tgcattgtcag 60
 ctgattctgga agtaaccacc agcacctggg ttttgcttgg aggggtcctc gcggccctag 120
 cggcctactg cttgtcagtc ggttgtgttg tgattgtggg tcatatcgag ctgggggggca 180
 agccggcaat cgttccagac aaagaggtgt tgtatcaaca atacgatgag atggaagagt 240
 gctcacaagc tgccccatat atcgaacaag ctcaggtaat agctcaccag ttcaaggga 300
 aagtccttgg attgctgcag cgagccaccc aacaacaagc tgtcattgag cccatagtaa 360
 ctaccaactg gcaaaagctt gaggcctttt ggcacaagca t 401

<210> 36
 <211> 133
 <212> PRT
 <213> hepatitis C virus

<400> 36

Gln Asn Glu Ile Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala
 1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu
 20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys
 35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val
 50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys
65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln
85 90 95

Phe Lys Gly Lys Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln
100 105 110

Ala Val Ile Glu Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala
115 120 125

Phe Trp His Lys His
130

<210> 37
<211> 401
<212> DNA
<213> hepatitis C virus

<400> 37
tccaaaatga aatctgcttg acacacccca tcacaaaata catcatggca tgcattgtcag 60
ctgatctgga agtaaccacc agcacctggg ttttgcttgg aggggtcctc gcggccctag 120
cggcctactg cttgtcagtc ggttgtgttg tgattgtggg tcatatcgag ctgggggggca 180
agccggcaat cgttccagac aaagaggtgt tgtatcaaca atacgatgag atggaagagt 240
gctcacaagc tgccccatat atcgaacaag ctcaggtgat agctcaccag ttcaaggaaa 300
aagtccttgg attgctgcag cgagccaccc aacaacaagc tgtcattgag cccatagtaa 360
ctaccaactg gcaaaagctt gaggcctttt ggcacaagca t 401

<210> 38
<211> 133
<212> PRT
<213> hepatitis C virus

<400> 38

Gln Asn Glu Ile Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala
1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu
20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys
 35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val
 50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys
 65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln
 85 90 95

Phe Lys Glu Lys Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln
 100 105 110

Ala Val Ile Glu Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala
 115 120 125

Phe Trp His Lys His
 130

<210> 39
 <211> 401
 <212> DNA
 <213> hepatitis C virus

<400> 39
 tccaaaatga aatctgcttg acacacccca tcacaaaata catcatggca tgcattgtag 60
 ctgatctgga agtaaccacc agcacctggg ttttgcttgg aggggtcctc gcggccctag 120
 cggcctactg cttgtcagtc ggttgtgttg tgattgtggg tcatatcgag ctgggggggca 180
 agccgggcaat cggtccagac aaagaggtgt tgtatcaaca atacgatgag atggaagagt 240
 gctcacaagc tgccccatat atcgaacaag ctcaggtaat agctcaccag ttcaaggaaa 300
 aagtccttgg attgctgcag cgagccaccc aacaacaagc tgtcattgag cccatagtaa 360
 ctaccaactg gcaaaagctt gaggcctttt ggcacaagca t 401

<210> 40
 <211> 133
 <212> PRT
 <213> hepatitis C virus

<400> 40

Gln Asn Glu Ile Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala

1	5	10	15
Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu	20	25	30
Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys	35	40	45
Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val	50	55	60
Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys	65	70	75
Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln	85	90	95
Phe Lys Glu Lys Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln	100	105	110
Ala Val Ile Glu Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala	115	120	125
Phe Trp His Lys His	130		

<210> 41
 <211> 509
 <212> DNA
 <213> hepatitis C virus

<400> 41	
ccatgagcac gaatcctaaa cctcaaagaa aaacaaaaag aaacaccaac cgtcgcccac	60
aggacgtcaa gttcccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca	120
ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccgtg	180
gacggcgtca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg	240
ggtacccttg gcccctttac gccaatgagg gcctcgggtg ggcagggtgg ctgctctccc	300
ctcgaggctc tcggcctaatt tggggcccca atgacccccg gcgaaaatcg cgtaatttgg	360
gtaaggtcat cgatacccta acgtgcggat tcgccgatct catgggggtat atcccgtctg	420
taggcggccc cattgggggc gtcgcaaggg ctctcgcaca cggtgtgagg gtccttgagg	480

acggggtaaa ctatgcaaca gggaattta

509

<210> 42
<211> 169
<212> PRT
<213> hepatitis C virus

<400> 42

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu
165

<210> 43
<211> 509
<212> DNA

<213> hepatitis C virus

<400> 43

```
ccatgagcac gaatcctaaa cctcaaagaa aaacaaaaag aaacaccaac cgtcgcccac    60
aggacgtcaa gttccccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca    120
ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caacccccgtg    180
gacggcggtca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg    240
ggtacccttg gcccctttac gccaatgagg gcctcgggtg ggcaggggtg ctgctctccc    300
ctcgaggctc tcggccta at tggggcccca atgacccccg gcgaaaatcg cgtaatttgg    360
gtaaggatcat cgatacccta acgtgcggat tcgccgatct catgggggtat atcccgtctg    420
taggcggccc cattgggggc gtcgcaaggg ctctcgacaca cgggtgtgagg gtccttgagg    480
acggggtaaa ctatgcaaca gggaattta    509
```

<210> 44

<211> 169

<212> PRT

<213> hepatitis C virus

<400> 44

```
Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1          5          10          15
```

```
Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
          20          25          30
```

```
Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
          35          40          45
```

```
Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
          50          55          60
```

```
Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
          65          70          75          80
```

```
Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
          85          90          95
```

```
Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
          100          105          110
```


Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu
 165

<210> 45
 <211> 580
 <212> DNA
 <213> hepatitis C virus

<400> 45
 aacgtgcgga ttcgccgatc tcatggggta tatcccgtc gtaggcggcc ccattggggg 60
 cgtcgcaagg gctctcgac acggtgtgag ggtccttgag gacggggtaa actatgcaac 120
 agggaaattta cccggttgct ctttctctat ctttattctt gctcttctct cgtgtctgac 180
 cgttccggcc tctgcagttc cctaccgaaa tgcctctggg atttatcatg ttaccaatga 240
 ttgccccaaac tcttccatag tctatgaggc agataacctg atcctacacg cacctgggtg 300
 cgtgccttgt gtcatgacag gtaatgtgag tagatgctgg gtccaaatta cccctacact 360
 gtcagccccg agcctcggag cagtcacggc tcctcttcgg agagccgttg actacctagc 420
 gggagggggct gccctctgct ccgcgttata cgtaggagac gcgtgtgggg cactattctt 480
 ggtaggccaa atgttcacct ataggcctcg ccagcacgct acggtgcaga actgcaactg 540
 ttccatttac agtggccatg ttaccggcca ccgatggca 580

<210> 46
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 46

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly
 1 5 10 15

Pro Ile Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His
 85 90 95

Ala Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys
 100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val
 115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln
 165 170 175

Asn Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met
 180 185 190

Ala

<210> 47
 <211> 580
 <212> DNA
 <213> hepatitis C virus

<400> 47
 aacgtgcgga ttcgccgatc tcatggggta tatcccgctc gtaggcggcc ccattggggg 60
 cgtcgcaagg gctctcgac acggtgtgag ggtccttgag gacggggtaa actatgcaac 120
 aggggaattta cccgggtgct ctttctctat ctttattctt gctcttctct cgtgtctgac 180

cgttcgagcc tctgcagttc cctaccgaaa tgccctctggg atttatcatg ttaccaatga 240
 ttgcccacaa tcttccatag tctatgaggg agataacctg atcctacacg cacctgggtg 300
 cgtgccttgt gtcatgacag gtaatgtgag tagatgctgg gtccaaatta ccctacact 360
 gtcagccccg agcctcggag cagtcacggc tctctctcgg agagccgttg actacctagc 420
 gggaggggct gccctctgct ccgcgttata cgtaggagac gcgtgtgggg cactattctt 480
 ggtaggccaa atgttcacct ataggcctcg ccagcacgct acggtgcaga actgcaactg 540
 ttccatttac agtggccatg ttaccggcca ccggatggca 580

<210> 48
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 48

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly
 1 5 10 15

Pro Ile Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His
 85 90 95

Ala Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys
 100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val
 115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln
 165 170 175

Asn Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met
 180 185 190

Ala

<210> 49
 <211> 959
 <212> DNA
 <213> hepatitis C virus

<400> 49
 ccatgagcac gaatcctaaa cctcaaagaa aaacacaaaag aaacaccaac cgtcgcccac 60
 aggacgtcaa gttccccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca 120
 ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccgtg 180
 gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg 240
 ggtacccttg gcccctttac gccaatgagg gcctcgggtg ggcaggggtg ctgctctccc 300
 ctcgaggctc tcggcctaata tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360
 gtaagggtcat cgatacccta acgtgcggat tcgccgatct catgggggtat atcccgtcgc 420
 taggcggccc cattgggggc gtcgcaaggg ctctcgaca cggtgtgagg gtccttgagg 480
 acggggtaaa ctatgcaaca ggggaatttac ccggttgctc tttctctatc tttattcttg 540
 ctcttctctc gtgtctgacc gttccggcct ctgcagttcc ctaccgaaat gcctctggga 600
 tttatcatgt taccaatgat tgcccaaact cttccatagt ctatgaggca gataacctga 660
 tcctacacgc acctgggttg gtgccttggtg tcatgacagg taatgtgagt agatgctggg 720
 tccaaattac ccctacactg tcagccccga gcctcggagc agtcacggct cctcttcgga 780
 gagccgttga ctacctagcg ggaggggctg ccctctgctc cgcgttatac gtaggagacg 840
 cgtgtggggc actattcttg gtaggccaaa tgttcaccta taggcctcgc cagcacgcta 900
 cggtgcagaa ctgcaactgt tccatttaca gtggccatgt taccggccac cggatggca 959

<210> 50

<211> 319
<212> PRT
<213> hepatitis C virus

<400> 50

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro
 210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val
 225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala
 245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly
 275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys
 290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala
 305 310 315

<210> 51
 <211> 959
 <212> DNA
 <213> hepatitis C virus

<400> 51
 ccatgagcac gaatcctaaa cctcaaagaa aaacaaaaag aaacaccaac cgtcgcccac 60
 aggacgtcaa gttcccgggc ggtggtcaga tcgttgccgg agtttacttg ttgccgcgca 120
 ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggctg caaccccgctg 180
 gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaaccgg 240
 ggtacccttg gcccctttac gccaatgagg gcctcgggtg ggcaggggtg ctgctctccc 300
 ctcgaggctc tcggcctaatt tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360
 gtaaggatcat cgatacccta acgtgcggat tcgccgatct catgggggtac atcccgcctg 420
 taggcggccc cgttgggggc gtcgcaaggg ctctcgcaca cgggtgtgagg gtccttgagg 480
 acggggtaaa ctatccaaca gggaatttac ccggttgctc tttctctatc tttattcttg 540
 ctcttctctc gtgtctgacc gttccggcct ctgcagttcc ctaccgaaat gcctctggga 600
 tttatcatgt taccaatgat tgcccaaact cttccatagt ctatgaggca gataacctga 660

tcctacacgc acctgggtgc gtgccttggtg tcatgacagg taatgtgagt agatgctggg 720
 tccaaattac ccctacactg tcagccccga gcctcggagc agtcacggct cctcttcgga 780
 gagccgttga ctacctagcg ggaggggctg ccctctgctc cgcgttatac gtaggagacg 840
 cgtgtggggc actattcttg gtaggccaaa tgttcaccta taggcctcgc cagcacgcta 900
 cgggtgcagaa ctgcaactgt tccatttaca gtggccatgt taccggccac cggatggca 959

<210> 52
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 52

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
 100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Val
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala
305 310 315

<210> 53
<211> 959
<212> DNA
<213> hepatitis C virus

<400> 53
ccatgagcac gaatcctaaa cctcaaagaa aaacaaaag aaacaccaac cgtcgccac 60
aggacgtcaa gttcccgggc ggtggtcaga tcgttgggcg agtttacttg ttgccgcgca 120
ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccg 180
gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg 240
ggtacccttg gcccttttac gccaatgagg gcctcgggtg ggcagggtgg ctgctctccc 300

ctcgaggctc tcggcctaata tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360
 gtaagggtcat cgatacccta acgtgcggat tcgccgatct catgggggtay atccccgctcg 420
 taggcggccc crttggggggc gtcgcaaggg ctctcgcaca cgggtgtgagg gtccttgagg 480
 acgggggtaaa ctatscaaca gggaattttac ccggttgctc tttctctatc tttattcttg 540
 ctcttctctc gtgtctgacc gttccggcct ctgcagttcc ctaccgaaat gcctctggga 600
 tttatcatgt taccaatgat tgcccaaact cttccatagt ctatgaggca gataacctga 660
 tcctacacgc acctgggttg gtcgcttggtg tcatgacagg taatgtgagt agatgctggg 720
 tccaaattac ccctacactg tcagccccga gcctcggagc agtcacggct cctcttcgga 780
 gagccgttga ctacctagcg ggaggggctg ccctctgctc cgcgttatac gtaggagacg 840
 cgtgtggggc actattcttg gtaggccaaa tggtcaccta taggcctcgc cagcacgcta 900
 cgggtgcagaa ctgcaactgt tccattttac gtggccatgt taccggccac cggatggca 959

<210> 54
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 54

Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Asn
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Met	Gly	Val	Arg	Ala
		35					40					45			

Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
	50					55					60				

Ile	Pro	Lys	Ala	Arg	Gln	Pro	Thr	Gly	Arg	Ser	Trp	Gly	Gln	Pro	Gly
65					70				75					80	

Tyr	Pro	Trp	Pro	Leu	Tyr	Ala	Asn	Glu	Gly	Leu	Gly	Trp	Ala	Gly	Trp
				85					90					95	

Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Asn	Trp	Gly	Pro	Asn	Asp	Pro
			100					105					110		

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala
305 310 315

<210> 55
<211> 354
<212> DNA
<213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (191)..(191)
 <223> "n" is any nucleotide

<400> 55
 accaccggag cttctatcac atactccact tacggcaagt tccttgctga tggaggggtgt 60
 tcaggcggcg cgcattgacgt gatcatatgc gacgagtgcc attcccagga cgccaccacc 120
 attcttgggga taggcactgt ccttgaccag gcagagacgg ctggagctag gctcgtcgtc 180
 ttggccacgg ncacccctcc cggcagtgtg acaacgcccc accccaacat cgaggaagtg 240
 gccctgcctc aggaggggga ggttcccttc tacggcagag ccattcccct tgcttttata 300
 aagggtggta ggcattctcat cttctgccat tccaagaaaa attgtgatga actc 354

<210> 56
 <211> 118
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (64)..(64)
 <223> "Xaa" is any amino acid

<400> 56

Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala
 1 5 10 15

Asp Gly Gly Cys Ser Gly Gly Ala His Asp Val Ile Ile Cys Asp Glu
 20 25 30

Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly Ile Gly Thr Val Leu
 35 40 45

Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Xaa
 50 55 60

Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro Asn Ile Glu Glu Val
 65 70 75 80

Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr Gly Arg Ala Ile Pro
 85 90 95

Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys
 100 105 110

Lys Asn Cys Asp Glu Leu
 115

<210> 57
 <211> 354
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (185)..(185)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (191)..(191)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (276)..(276)
 <223> "n" is any nucleotide

<400> 57
 accaccggag cttctatcac atactccact tacggcaagt tccttgctga tggaggggtgt 60
 tcaggcggcg cgtatgacgt gatcatatgc gacgagtgcc attcccagga cgccaccacc 120
 attcttgggga taggcactgt ccttgaccag gcagagacgg ctggagctag gctcgtcgtc 180
 ttggnacagg ncaccctcc cggcagtgtg acaacgcccc accccaacat cgaggaagtg 240
 gccctgcctc aggaggggga ggttccttc tacggnagag ccattcccct tgcttttata 300
 aagggtggtg ggcattctcat cttctgccat tccaagaaaa aatgtgatga actt 354

<210> 58
 <211> 133
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (62)..(62)
 <223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (64)..(64)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (92)..(92)
<223> "Xaa" is any amino acid

<400> 58

Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala
1 5 10 15

Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Val Ile Ile Cys Asp Glu
20 25 30

Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly Ile Gly Thr Val Leu
35 40 45

Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Xaa Thr Xaa
50 55 60

Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro Asn Ile Glu Glu Val
65 70 75 80

Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr Xaa Arg Ala Ile Pro
85 90 95

Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys
100 105 110

Lys Lys Cys Asp Glu Leu Arg Gln Ala Thr Asp Gln Pro Gly Arg Glu
115 120 125

Arg Pro Trp Glu Tyr
130

<210> 59
<211> 357
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature

<222> (38)..(38)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (76)..(76)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (79)..(79)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (151)..(151)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (232)..(232)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (349)..(349)
<223> "n" is any nucleotide

<400> 59
atggcctttca tgtctccgga cttggaggtc attaccanca cttgggttct ggtggggggc 60
gttgtggcga ccctgncgnc ctactgcttg acggtgggtt cggtagccat agtcggtagg 120
atcatcctct ctgggaaacc tgccatcatt nccgataggg aggtattata ccagcaattt 180
gatgagatgg aggagtgtc ggcctcgctt ccctatatgg acgaaacacg tnccattgcc 240
ggacaattca aagagaaagt gtcgggcttc atcagcacga ccggccagaa ggctgaaact 300
ctgaagccgg cagccacgtc tgtgtggaac aaggctgac agttctggnc cacatac 357

<210> 60
<211> 128
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (26)..(27)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (51)..(51)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (78)..(78)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (117)..(117)
<223> "Xaa" is any amino acid

<400> 60

Met Ala Phe Met Ser Pro Asp Leu Glu Val Ile Thr Xaa Thr Trp Val
1 5 10 15

Leu Val Gly Gly Val Val Ala Thr Leu Xaa Xaa Tyr Cys Leu Thr Val
20 25 30

Gly Ser Val Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala
35 40 45

Ile Ile Xaa Asp Arg Glu Val Leu Tyr Gln Gln Phe Asp Glu Met Glu
50 55 60

Glu Cys Ser Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Xaa Ile Ala
65 70 75 80

Gly Gln Phe Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln
85 90 95

Lys Ala Glu Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala
100 105 110

Asp Gln Phe Trp Xaa Thr Tyr Met Trp Asn Phe Ile Ser Gly Ile Gln

115

120

125

<210> 61
 <211> 357
 <212> DNA
 <213> hepatitis C virus

 <220>
 <221> misc_feature
 <222> (38)..(38)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (70)..(70)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (174)..(174)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (339)..(339)
 <223> "n" is any nucleotide

<400> 61
 atggccttgca tgtctgcgga cctggaggtc attaccanca cttgggttct ggtggggggc 60
 gttgtggcgn ccctggcggc ctactgcttg acggtgggtt cggtagccat agtcggtagg 120
 atcatcctct ctgggaaacc tgccatcatt cccgataggg aggcattata ccancaattt 180
 gatgagatgg aggagtgtc ggccctgttg ccctatatgg acgagacacg tgccattgcc 240
 ggacaattca aagagaaagt gtcgggttc atcagcacga ccggccagaa ggctgaaact 300
 ctgaagccgg cagccacgtc tgtgtggaac aagggtganc agttctgggc cacatac 357

<210> 62
 <211> 128
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (13)..(13)
 <223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (58)..(58)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (113)..(113)
<223> "Xaa" is any amino acid

<400> 62

Met Ala Cys Met Ser Ala Asp Leu Glu Val Ile Thr Xaa Thr Trp Val
1 5 10 15

Leu Val Gly Gly Val Val Ala Xaa Leu Ala Ala Tyr Cys Leu Thr Val
20 25 30

Gly Ser Val Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala
35 40 45

Ile Ile Pro Asp Arg Glu Ala Leu Tyr Xaa Gln Phe Asp Glu Met Glu
50 55 60

Glu Cys Ser Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala
65 70 75 80

Gly Gln Phe Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln
85 90 95

Lys Ala Glu Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala
100 105 110

Xaa Gln Phe Trp Ala Thr Tyr Met Trp Asn Phe Ile Ser Gly Ile Gln
115 120 125

<210> 63
<211> 28
<212> DNA
<213> artificial

<220>

<221> misc_feature

<223> HCPrl61

<400> 63

accggaggcc aggagagtga tctcctcc

28

<210> 64

<211> 28

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl62

<400> 64

gggctgctct atcctcatcg acgccatc

28

<210> 65

<211> 28

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl63

<400> 65

gccagaggct cggaaggcga tcagcgct

28

<210> 66

<211> 28

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl64

<400> 66

gagctgctct gtctctctcg acgcgcga

28

<210> 67

<211> 20

<212> DNA

<213> artificial

<220>

<221> misc_feature
<223> HCPr23

<400> 67
ctcatggggt acattccgct

20

<210> 68
<211> 27
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr54

<400> 68
ctattaccag ttcatcatca tatccca

27

<210> 69
<211> 24
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr116

<400> 69
ttttaaatat atcatgrctg yatg

24

<210> 70
<211> 33
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr66

<400> 70
ctattattgt atcccrctga tgaarttcca cat

33

<210> 71
<211> 36
<212> DNA
<213> artificial

<220>
<221> misc_feature

<223> HCPrl18

<400> 71

actagtcgac taytgatccr ctatrwarrrt ccacat

36

<210> 72

<211> 25

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl17

<400> 72

tttttaaatac atcgcrctgc atgca

25

<210> 73

<211> 36

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl19

<400> 73

actagtcgac tarttgcata gcckrttcat ccaytg

36

<210> 74

<211> 34

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl31

<400> 74

ggaattctag acctctggga ygaraytgga artg

34

<210> 75

<211> 31

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl30

<400> 75
ggaattctag acgctaycar gcacgttgyg c 31

<210> 76
<211> 23
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr134

<400> 76
catatagatg cccacttcct atc 23

<210> 77
<211> 16
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr3

<400> 77
gtgtgccagg accatc 16

<210> 78
<211> 20
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr4

<400> 78
gacatgcatg tcatgatgta 20

<210> 79
<211> 29
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr152

<400> 79
tacgcctctt ctatatcggg tggggcctg

29

<210> 80
<211> 26
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr52

<400> 80
atgttgggta aggtcatcga taccct

26

<210> 81
<211> 25
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr41

<400> 81
cccgggaggt ctcgtagacc gtgca

25

<210> 82
<211> 29
<212> DNA
<213> artificial

<220>
<221> misc_feature
<223> HCPr40

<400> 82
ctattaaaga tagagaaaga gcaaccggg

29

<210> 83
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 83

Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu
1 5 10

<210> 84
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 84

Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val
1 5 10

<210> 85
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 85

Val Tyr Glu Ala Asp Asp Val Ile Leu His Thr
1 5 10

<210> 86
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 86

Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala
1 5 10

<210> 87
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 87

Val Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val
1 5 10

<210> 88
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 88

Val Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile
1 5 10

<210> 89

<211> 10
<212> PRT
<213> hepatitis C virus

<400> 89

Val Arg Tyr Val Gly Ala Thr Thr Ala Ser
1 5 10

<210> 90
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 90

Ala Pro Ser Leu Gly Ala Val Thr Ala Pro
1 5 10

<210> 91
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 91

Arg Pro Arg Arg His Gln Thr Val Gln Thr
1 5 10

<210> 92
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 92

Arg Pro Arg Gln His Ala Thr Val Gln Asn
1 5 10

<210> 93
<211> 9
<212> PRT
<213> hepatitis C virus

<400> 93

Gln Pro Thr Gly Arg Ser Trp Gly Gln
1 5

<210> 94
<211> 8
<212> PRT

<213> hepatitis C virus

<400> 94

Val Gln Asp Gly Asn Thr Ser Thr
1 5

<210> 95

<211> 8

<212> PRT

<213> hepatitis C virus

<400> 95

Val Gln Asp Gly Asn Thr Ser Ala
1 5

<210> 96

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 96

Val Lys Tyr Val Gly Ala Thr Thr Ala Ser
1 5 10

<210> 97

<211> 20

<212> PRT

<213> hepatitis C virus

<400> 97

Leu Gly Gly Lys Pro Ala Ile Val Pro Asp Lys Glu Val Leu Tyr Gln
1 5 10 15

Gln Tyr Asp Glu
20

<210> 98

<211> 20

<212> PRT

<213> hepatitis C virus

<400> 98

Leu Gly Gly Lys Pro Ala Leu Val Pro Asp Lys Glu Val Leu Tyr Gln
1 5 10 15

Gln Tyr Asp Glu

<210> 99
 <211> 20
 <212> PRT
 <213> hepatitis C virus

<400> 99

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln
 1 5 10 15

Phe Lys Glu Lys
 20

<210> 100
 <211> 20
 <212> PRT
 <213> hepatitis C virus

<400> 100

Ile Ala His Gln Phe Lys Glu Lys Val Leu Gly Leu Leu Gln Arg Ala
 1 5 10 15

Thr Gln Gln Gln
 20

<210> 101
 <211> 20
 <212> PRT
 <213> hepatitis C virus

<400> 101

Ile Ala His Gln Phe Lys Glu Lys Ile Leu Gly Leu Leu Gln Arg Ala
 1 5 10 15

Thr Gln Gln Gln
 20

<210> 102
 <211> 20
 <212> PRT
 <213> hepatitis C virus

<400> 102

Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Ala Leu Tyr Gln
 1 5 10 15

Gln Phe Asp Glu
20

<210> 103
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 103

Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Gln
1 5 10 15

Gln Phe Asp Glu
20

<210> 104
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 104

Ser Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln
1 5 10 15

Phe Lys Glu Lys
20

<210> 105
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 105

Ile Ala Gly Gln Phe Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr
1 5 10 15

Gly Gln Lys Ala
20

<210> 106
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 106

ctccactgta accgaaaagg acatcagggt cgaggaggag gtctatcagt gttgtgacct 60
ggagcccgaa gcccgcaagg caattaccgc cctaacagag agactctacg tgggcggtcc 120
catgcataac agcaagggag acctgtgcgg gtatcgcaga tgtcgcgcaa gcggcgtcta 180
caccaccagc ttcggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcaaagc 240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggttg tcatcgctga 300
gagcgatggc gtagaggagg acaaacgacc cctcggagcc 340

<210> 107
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 107

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Lys Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Pro Leu Gly
100 105 110

Ala

<210> 108
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 108
 ctccactgta accgaaaagg acatcagggg cgaggaggag gtatatcagt gttgtgacct 60
 ggagcccagag gcccgagag caattaccgc cctaacagag agactctacg tgggcgggtcc 120
 catgcataac agcaggggag acctgtgcgg gtatcgaga tgccgtgcga gcggcggtcta 180
 caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ctatcagagc 240
 ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcattgctga 300
 aagcgatggc gtagaggagg acaaacgagc cctcggagcc 340

<210> 109
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 109

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Thr Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
 100 105 110

Ala

<210> 110
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 110
ctccactgta accgaaaaag acatcagggt cgaggaggag gtatatcagt gttgtgacct 60
ggagcccgaa gcccgcaagg taattaccgc cctaacagag agactctatg tgggcgggtcc 120
catgcataat agcaaaggag acctgtgcgg gtatcgcaga tgccgcgcaa gcggcgtcta 180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ccatcagggc 240
gtcagggctg agagactgca ctatgctggt ctatggtgac gacctggtcg tcattgccga 300
gagcgatggc gtagaggagg acaaacgagc cctcggagtc 340

<210> 111
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 111
Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15
Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
20 25 30
Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60
Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80
Ser Gly Leu Arg Asp Cys Thr Met Leu Val Tyr Gly Asp Asp Leu Val
85 90 95
Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Val

<210> 112
<211> 340
<212> DNA

<213> hepatitis C virus

<400> 112

```
ctccactgta accgaaaagg acatcagggt cgaggaggag gtgtatcagt gttgtgacct    60
ggagcccagag gcccgcaagg caattactgc cctaacagag agactctatg tgggcggtcc    120
catgcataac agcaagggag acctgtgtgg gtatcgaga tgccgcgcaa gggcggtcta    180
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcagagc    240
ggcgggggtg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcatcgctga    300
gagcgatggc gttgaggagg acaaacgagc cctcggagcc    340
```

<210> 113

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 113

```
Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1          5          10          15
```

```
Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20          25          30
```

```
Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35          40          45
```

```
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50          55          60
```

```
Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65          70          75          80
```

```
Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85          90          95
```

```
Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100         105         110
```

Ala

<210> 114

<211> 340

<212> DNA
<213> hepatitis C virus

<400> 114
ctccacggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60
ggagcccgaa gcccgcaagg tgatatccgc cctaacggaa agactctacg tgggcggtcc 120
catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180
caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgcgg ctactagggc 240
cgcaggtctg aaaggttgca gcatgctggt ttgtggagac gacttagtcg tcatctgcga 300
gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 115
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 115

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
100 105 110

Ala

<210> 116

<211> 340
<212> DNA
<213> hepatitis C virus

<400> 116
ctccactgtg actgagagag acatcaaggt cgaagaagaa gtctatcagt gttgtgatct 60
ggagcccgag gcccgcaagg taatagccgc cctcacggag agactctacg tgggcggccc 120
catgcataac agcaagggag acctttgcgg gtatcgtaga tgccgcgcga gcggcgata 180
caccaccagc ttcgggaaca caatgacgtg ctaccttaag gcctcagcag ccatcagggc 240
tgcggggcta aaggattgca ccatgctggt ttgcggtgac gacctagtcg tgatcgccga 300
gagcggtggc gttgaggagg acaaacgagc cctcggagct 340

<210> 117
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 117
Ser Thr Val Thr Glu Arg Asp Ile Lys Val Glu Glu Glu Val Tyr Gln
1 5 10 15
Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ala Ala Leu Thr
20 25 30
Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60
Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80
Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95
Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 118
 <211> 574
 <212> DNA
 <213> hepatitis C virus

<400> 118
 acttgcggct ttgccgacct catgggatac atcccgctcg taggcgcccc tgtgggtggc 60
 gtcgccaggg ccctggcaca cgggtgtagg gctgtggagg acgggatcaa ttatgcgaca 120
 gggaatcttc ccggttgctc tttctctatc ttcctcttgg cacttctttc gtgcctgact 180
 gttcccacct cggccgtcaa ctatcgcaat gcctcgggca tctatcacat caccaatgac 240
 tgcccgaact cgagcatagt gtacgagacc gagcaccaca tcctacacct cccaggggtg 300
 ttaccctgcg tgagggttgg gaatcagtca cgctgctggg tggccctcac tcccaccgtg 360
 gcggcgccct acatcggcgc tccgcttgaa tccctccgga gtcattgtga tctgatggta 420
 ggtgccgcta ctgcgtgctc cgctctttac atcggagacc tgtgcggtgg cgtattcttg 480
 gttggtcaga tgttctcttt ccagccgcgg cgccactgga ctacgcagga ctgcaattgt 540
 tccatctacg cggggcacgt tacgggccac agga 574

<210> 119
 <211> 191
 <212> PRT
 <213> hepatitis C virus

<400> 119

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His
 85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys
 100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro
 115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Ala Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg
 180 185 190

<210> 120
 <211> 574
 <212> DNA
 <213> hepatitis C virus

<400> 120
 acgtgaggct ttgccgacct catgggatac atcccgctcg tgggcgcccc tgtgggtggc 60
 gtcgccaggg ccttggcaca tgggtgtcagg gccgtggagg acgggattaa ctatgcaaca 120
 gggaatcttc ccggttgtct cttttctatc ttccttctag cacttctctc gtgcttgact 180
 gtcccgacct cggcgcagca ctaccggaac atctcgggca tttatcacgt caccaatgac 240
 tgcccgaact ctagtatagt gtatgaagct gaccatcata tcatgcatct accaggggtg 300
 gtgccttgcg tgagaaccgg gaacacctcg cgctgctggg ttcctttaac acccactgtg 360
 gctgccccct atgttggcgc gccgctcgaa tccatgcggc ggcacgtgga cttaatgggtg 420
 ggtgccgcca ccgtctgtct ggccctgtac atcggagacc tttgcggagg tgtcttctctg 480
 gtcgggcaga tgttcacctt ccggccgcgc cgccattgga ctaccagga ctgcaactgc 540
 tctatctatg atggccacat caccggccat agaa 574

<210> 121
 <211> 191
 <212> PRT
 <213> hepatitis C virus

<400> 121

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg
180 185 190

<210> 122

<211> 574

<212> DNA

<213> hepatitis C virus

<400> 122

acgtgcggtc tcgcgcacct catgggatac atcccgcctcg tgggcgcccc cgttgggggc

60

gtcgccaggg ccctggcgca tggcgtcagg gctgtggagg acgggattaa ctatgcgaca 120
 gggaatcttc ccggttgctc tttctctatc ttctctctgg cacttctttc gtgcctcact 180
 gtcccagcgt cagctgagca ctaccggaat gcttcgggca tctatcacat caccaatgac 240
 tgtccgaatt ccagcgtagt ctatgaaact gaccaccata tattgcactt gccgggggtgc 300
 gtaccctgcg tgagggccgg gaacgtgtct cgttgctgga cgccggtaac acctacggtg 360
 gctgccgtat ccatggacgc tccgctcgag tccttcgggc ggcattgtgga cctaattgta 420
 ggtgcccga ccggtgtgtc tgtcctctat gttggagacc tctgtggagg tgctttccta 480
 gtggggcaga tggtcacctt ccagccgcgt cgccactgga ccacgcagga ttgtaattgc 540
 tccatctata ctggccatat caccggccac agga 574

<210> 123
 <211> 191
 <212> PRT
 <213> hepatitis C virus

<400> 123

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys
 100 105 110

Trp Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro
 115 120 125

Leu Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Val Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg
 180 185 190

<210> 124
 <211> 31
 <212> DNA
 <213> artificial

<220>
 <221> misc_feature
 <223> HCPr206

<400> 124
 tgggggatccc gtatgatacc cgctgctttg a 31

<210> 125
 <211> 30
 <212> DNA
 <213> artificial

<220>
 <221> misc_feature
 <223> HCPr207

<400> 125
 ggcggaattc ctggatcatag cctccgtgaa 30

<210> 126
 <211> 12
 <212> PRT
 <213> hepatitis C virus

<400> 126

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile
 1 5 10

<210> 127
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 127

Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val
1 5 10

<210> 128
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 128

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile
1 5 10

<210> 129
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 129

Val Tyr Glu Thr Glu His His Ile Leu His Leu
1 5 10

<210> 130
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 130

Val Tyr Glu Ala Asp His His Ile Met His Leu
1 5 10

<210> 131
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 131

Val Tyr Glu Thr Asp His His Ile Leu His Leu
1 5 10

<210> 132
<211> 13

<212> PRT
<213> hepatitis C virus

<400> 132

Val Arg Val Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 133
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 133

Val Arg Thr Gly Asn Thr Ser Arg Cys Trp Val Pro Leu
1 5 10

<210> 134
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 134

Val Arg Ala Gly Asn Val Ser Arg Cys Trp Thr Pro Val
1 5 10

<210> 135
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 135

Ala Pro Tyr Ile Gly Ala Pro Leu Glu Ser
1 5 10

<210> 136
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 136

Ala Pro Tyr Val Gly Ala Pro Leu Glu Ser
1 5 10

<210> 137
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 137

Ala Val Ser Met Asp Ala Pro Leu Glu Ser
1 5 10

<210> 138

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 138

Gln Pro Arg Arg His Trp Thr Thr Gln Asp
1 5 10

<210> 139

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 139

Arg Pro Arg Arg His Trp Thr Thr Gln Asp
1 5 10

<210> 140

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 140

Arg Pro Arg Arg His Trp Thr Thr Gln Asp
1 5 10

<210> 141

<211> 23

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl09

<400> 141

tgggatatga tgatgaactg gtc

23

<210> 142

<211> 24

<212> DNA

<213> artificial

<220>

<221> misc_feature

<223> HCPrl4

<400> 142

ccaggtacaa ccgaaccaat tgcc

24

<210> 143

<211> 957

<212> DNA

<213> hepatitis C virus

<400> 143

atgagcacaa atcctaaacc tcaaagaaaa accaaaagaa aactaaccg ccgcccacag 60
gacgtcaagt tcccgggcgg tggccagatc gttggtggag tatacttggt gccgcgcagg 120
ggcccccggt tgggtgtgcg cgcgacgagg aaaacttccg agcgggtccca gccacgtggg 180
aggcgccagc ccattcccaa agatcggcgc cccactggca agtcctgggg aaaaccagga 240
tacccttggc ccctgtacgg gaatgagggc ctcggtggg caggggtggct cctgtccccc 300
cgaggggtctc gcccgcatg gggcccaact gacccccggc acaggtcacg caacttgggt 360
aaggtcatcg atacccttac gtgtggcttt gccgacctca tgggtacat ccctgtcgtc 420
ggcgccccag ttggtggtgt cgccagagct ctgcgcgatg gcgtgagagt tctggaagac 480
gggataaact atgcaacagg gaacttgccc ggttgctcct tttctatctt cttattggcc 540
ctgctatctt gtatcactgt gccggtctcc ggcttgacag tcaagaacac cagcagctct 600
tacatggtaa ccaatgactg ccagaacagt agcatcgtct ggcagctcag ggatgctgtt 660
cttcacgtcc ccgggtgtgt cccttgtgag gagaagggca acatatcccg ctgttgata 720
ccggtttcgc ccaatatagc tgtgagccaa cctgggtgcgc ttaccaaggg cctgcggacg 780
catattgata ccattcattgc atccgctacg ttttgcctct ccctgtacat aggagacctg 840
tgtggcgcggt tgatgttggc ttctcaagtc ttcattcatct cgtcccagca tcataagttt 900
gtccaggact gcaactgttc catataccca ggccacatca ctggacatcg gatggcg 957

<210> 144

<211> 319

<212> PRT

<213> hepatitis C virus

<400> 144

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Pro Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Gly Leu
180 185 190

Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val Thr Asn Asp Cys Gln
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro
210 215 220

Gly Cys Val Pro Cys Glu Glu Lys Gly Asn Ile Ser Arg Cys Trp Ile

225 230 235 240
 Pro Val Ser Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Leu Thr Lys
 245 250 255
 Gly Leu Arg Thr His Ile Asp Thr Ile Ile Ala Ser Ala Thr Phe Cys
 260 265 270
 Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Leu Ala Ser
 275 280 285
 Gln Val Phe Ile Ile Ser Pro Gln His His Lys Phe Val Gln Asp Cys
 290 295 300
 Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
 305 310 315

<210> 145
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 145
 ctcaacgggtc acggagaggg acatcagaac tgaggagtcc atataccttg cttgctcttt 60
 acccgagcag gcacggactg ccatacactc actgactgag aggctttacg tgggagggcc 120
 catgctaaac agcaaagggc aaacctgcgg atacagacgc tgccgcgcca gcggagtgtt 180
 caccactagc atgggaaata ccatcacgtg ctacgtgaag gcacaagcag cctgtaaggc 240
 tgcgggcata attgccccca cgatgctggt gtgcggcgac gatctagttg tcatctcaga 300
 gagtcagggg accgaggagg acgagcggaa cctacgagcc 340

<210> 146
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 146

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
 1 5 10 15
 Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Leu Asn Ser Lys Gly Gln Thr
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Gln Ala Ala Cys Lys Ala
 65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
 100 105 110

Ala

<210> 147
 <211> 345
 <212> DNA
 <213> hepatitis C virus

<400> 147
 atgagcacac ttctaaacc acaaagaaaa accaaaagaa acaccaaccc cggccacagg 60
 acgttaagtt cccaggcggc ggtcagatcg ttggtggagt ttacgtgcta ccacgcaggg 120
 gccccagtt ggggtgtgct gcagtgcgca agacttcga gcggtcgcaa cctcgcagta 180
 ggcgccaacc catccccagg gcgcgccgaa ccgagggcag gtctctgggt cagccccgggt 240
 acccttgagg cctatatggg aatgagggct gcgggtgggc aggggtggctc ctgtccccgc 300
 gcggctctcg cccgtcgtgg ggcccaaattg acccccggcg cagga 345

<210> 148
 <211> 115
 <212> PRT
 <213> hepatitis C virus

<400> 148

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Pro Gly His Arg Thr Leu Ser Ser Gln Ala Ala Val Arg Ser Leu Val
 20 25 30

Glu Phe Thr Cys Tyr His Ala Gly Ala Pro Ser Trp Val Cys Val Gln
 35 40 45

Cys Ala Arg Leu Pro Ser Gly Arg Asn Leu Ala Val Gly Ala Asn Pro
 50 55 60

Ser Pro Gly Arg Ala Glu Pro Arg Ala Gly Pro Gly Leu Ser Pro Gly
 65 70 75 80

Thr Leu Gly Pro Tyr Met Gly Met Arg Ala Ala Gly Gly Gln Gly Gly
 85 90 95

Ser Cys Pro Arg Ala Ala Leu Ala Arg Arg Gly Ala Gln Met Thr Pro
 100 105 110

Gly Ala Gly
 115

<210> 149
 <211> 280
 <212> DNA
 <213> hepatitis C virus

<400> 149
 ggctgtgac ctcaaggacg aggctaggag ggtgataact tcactcacgg agcggcttta 60
 ctgtggtggt cctatgttca acagcaaggg acaacactgc ggttaccgcc gctgccgtgc 120
 tagtgggggtg ctaccaccca gcttcgggaa cacaatcacc tgttacatca aagcaaaggc 180
 agctacaaaa gctgccggaa ttaaaaatcc atcattcctt gtctgcggag atgacttggt 240
 cgtgattgct gagagtgcag ggatcgatga ggacagagcg 280

<210> 150
 <211> 93
 <212> PRT
 <213> hepatitis C virus

<400> 150

Ala Cys Asp Leu Lys Asp Glu Ala Arg Arg Val Ile Thr Ser Leu Thr
 1 5 10 15

Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Gln His
 20 25 30

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
 35 40 45

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Thr Lys Ala
 50 55 60

Ala Gly Ile Lys Asn Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
 65 70 75 80

Val Ile Ala Glu Ser Ala Gly Ile Asp Glu Asp Arg Ala
 85 90

<210> 151
 <211> 499
 <212> DNA
 <213> hepatitis C virus

<400> 151
 atgagcacga atcctaaacc tcaaagaaaa accaaaagaa acaccaaccg tcgcccacag 60
 gacgtcaagt tcccgggagg tggtcagatc gttggcggag ttacttggt gccgcgcagg 120
 ggccctagga tgggtgtgag cgcgactcgg aagacttcgg aacggtcgca accccgtgga 180
 cggcgctcagc ctattcccaa ggcgcgccag cccacgggac ggtcctgggg tcaaccggg 240
 tacccttgga ccttttacgc caatgagggc ctggggtggg cagggtgggt gctctccct 300
 cgaggtcttc ggcctaattg gggccccaat gaccccgga gaaaatcgcg taatttgggt 360
 aaggtcatcg ataccctaac gtgcggattc gccgatctca tggggtatat cccgctcgta 420
 ggcggcccca ttgggggagt cgcaagggtc ctgcacacg gtgtgagggt ccttgaggac 480
 ggggtaaaact atgcaacag 499

<210> 152
 <211> 166
 <212> PRT
 <213> hepatitis C virus

<400> 152

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala

35

40

45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr
165

<210> 153

<211> 579

<212> DNA

<213> hepatitis C virus

<400> 153

acgtgcggat tcgccgatct catggggtac atcccgctcg taggcggccc cgttgggggc 60
gtcgcaaggg ctctcgaca cggtgtgagg gtccttgagg acggggtaaa ctatccaaca 120
gggaatttac ccggttgctc tttctctatc tttattcttg ctcttctctc gtgtctgacc 180
gttccggcct ctgcagttcc ctaccgaaat gcctctggga tttatcatgt taccaatgat 240
tgcccaaact cttccatagt ctatgaggca gataacctga tcctacacgc acctgggtgc 300
gtgccttggtg tcatgacagg taatgtgagt agatgctggg tccaaattac ccctacactg 360
tcagccccga gcctcggagc agtcacggct cctcttcgga gagccgttga ctacctagcg 420
ggaggggctg ccctctgctc cgcgttatac gtaggagacg cgtgtggggc actattcttg 480

gtaggccaaa tggtcaccta taggcctcgc cagcacgcta cggtgcagaa ctgcaactgt 540
 tccatttaca gtggccatgt taccggccac cggatggcg 579

<210> 154
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 154

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu
 20 25 30

Glu Asp Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His
 85 90 95

Ala Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys
 100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val
 115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln
 165 170 175

Asn Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met

Ala

<210> 155
 <211> 579
 <212> DNA
 <213> hepatitis C virus

<400> 155
 acgtgcggat tcgccgacct cgtgggggtac atcccgcctcg taggcggccc cgttgggggc 60
 gtcgcaaggg ctctcgaca tgggtgtgagg gttcttgagg acgggggtgaa ttatgcaaca 120
 gggaatctgc ctggttgctc tttctctatc ttcattcttg cacttctctc gtgcctcact 180
 gtcccggcct ctgcagttcc ctaccgaaat gcctctggga tctatcatgt caccaatgat 240
 tgcccaaact cttccatagt ctatgaggca gatgatctga tcctacacgc acctggctgc 300
 gtgccttggtg tcaggaaaga taatgtgagt aggtgctggg tccaaattac cccacgctg 360
 tcagccccga gcttcggagc agtcacggct ccccttcgga gagcgttgga ttacttggtg 420
 ggaggggctg ccctctgctc cgcgttatac gttggagacg cgtgtggggc actatTTTTg 480
 gtaggccaaa tggtcaccta taggcctcgc cagcatgcta cgggtgcagga ctgcaactgt 540
 tccatctaca gtggccacgt caccggccat cagatggca 579

<210> 156
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 156

Thr Cys Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Gly
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80
Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His
85 90 95
Ala Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys
100 105 110
Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val
115 120 125
Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala
130 135 140
Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu
145 150 155 160
Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln
165 170 175
Asp Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met
180 185 190
Ala

<210> 157
<211> 530
<212> DNA
<213> hepatitis C virus

<400> 157
cacctacgac agctctgctg gtggcccagt tactgcggat tccccaaagt gtcattgaca 60
tcacgcgagg gagccactgg ggggtcttgt ttgccgccgc atactatgca tcggtggcta 120
actggaccaa ggtcgtgctg gtcttgtttc tgtttgcagg ggttgatgct actaccaga 180
tttcgggagg ctccagcgcc caaacgacgt atggcatcgc ctcatattat acccgcggcg 240
cgcagcagaa actgcagctc ataaatacca acggaagctg gcacatcaac aggaccgccc 300
ttaattgtaa tgacagcctc cagactgggt tcatagccgg cctcttttac taccataagt 360
tcaactcttc tggatgcccg gatcggtatg ctagctgtag ggcccttgcc acttttgacc 420
agggctgggg aactatcagc tatgccaaca tatcggtcc cagtgatgac aaaccatatt 480

gctggcacta tccccacgg ccgtgcggag tggtgccagc ccaagaggtc

530

<210> 158

<211> 176

<212> PRT

<213> hepatitis C virus

<400> 158

Pro Thr Thr Ala Leu Leu Val Ala Gln Leu Leu Arg Ile Pro Gln Val
1 5 10 15

Val Ile Asp Ile Ile Ala Gly Ser His Trp Gly Val Leu Phe Ala Ala
20 25 30

Ala Tyr Tyr Ala Ser Val Ala Asn Trp Thr Lys Val Val Leu Val Leu
35 40 45

Phe Leu Phe Ala Gly Val Asp Ala Thr Thr Gln Ile Ser Gly Gly Ser
50 55 60

Ser Ala Gln Thr Thr Tyr Gly Ile Ala Ser Phe Ile Thr Arg Gly Ala
65 70 75 80

Gln Gln Lys Leu Gln Leu Ile Asn Thr Asn Gly Ser Trp His Ile Asn
85 90 95

Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Ile Ala
100 105 110

Gly Leu Phe Tyr Tyr His Lys Phe Asn Ser Ser Gly Cys Pro Asp Arg
115 120 125

Met Ala Ser Cys Arg Ala Leu Ala Thr Phe Asp Gln Gly Trp Gly Thr
130 135 140

Ile Ser Tyr Ala Asn Ile Ser Gly Pro Ser Asp Asp Lys Pro Tyr Cys
145 150 155 160

Trp His Tyr Pro Pro Arg Pro Cys Gly Val Val Pro Ala Gln Glu Val
165 170 175

<210> 159

<211> 340

<212> DNA
<213> hepatitis C virus

<400> 159
ctcgaccggtt accgaacatg acataatgac cgaagagtcc atttaccaat catgtgactt 60
gcagcccgcag gcacgcgcag caatacgggtc actcacccaa cgcctctact gtggaggccc 120
catgtacaac agcaagggggc aacagtgtgg ttatcgaga tgccgcgcca gcggcgtttt 180
caccaccagt atggggcaaca ccatgacgtg ctacatcaag gctttagcct cctgtagagc 240
cgcaaggctc cgggactgca cgctcctggt gtgtggtgac gatcttgtgg ccatctgcga 300
gagccagggg acacacgagg atgaagcaag cctgagagcc 340

<210> 160
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 160

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Cys Asp Leu Gln Pro Glu Ala Arg Ala Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Arg Leu Arg Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Ser Leu Arg
100 105 110

Ala

<210> 161

<211> 340
<212> DNA
<213> hepatitis C virus

<400> 161
ctcaaccgcc accgaacatg acatattgac tgaagagtcc atataccaat catgtgactc 60
gcagcccgac gcacgcgcag caatacggtc actcacccaa cgcttggtct gtggaggccc 120
catgtataac agcaaggggc aacaatgtgg ttatcgaga tgccgcgcca gcggcgtctt 180
caccaccagt atgggcaaca ccatgacgtg ctacattaag gctttagcct cctgtagaac 240
cgctgggctc cgggactaca cgctcctggt gtgtggtgac gatcatgtgg ccactcgcga 300
gagccagggg acacacgagg atgaagcgaa cctgagagcc 340

<210> 162
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 162

Ser Thr Ala Thr Glu His Asp Ile Leu Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Cys Asp Ser Gln Pro Asp Ala Arg Ala Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Phe Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Thr
65 70 75 80

Ala Gly Leu Arg Asp Tyr Thr Leu Leu Val Cys Gly Asp Asp His Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Asn Leu Arg
100 105 110

Ala

<210> 163
 <211> 499
 <212> DNA
 <213> hepatitis C virus

<400> 163
 atgagcacga atcctaaact tcaaagaaaa accaaacgta acaccaaccg ccgccccatg 60
 gacgttaagt tcccgggtgg tggccagatc gttggcggag ttacttggt gccgcgcagg 120
 ggccctaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180
 aggcgccaac ctatcccaa ggcgcgccga tccgaggga gatcctgggc gcagcccggg 240
 tacccttggc ccctttacgg caatgagggc tgtgggtggg cagggtggct cctgtccct 300
 cgcgggtctc ggccgtcttg gggccctaata gatccccggc ggaggtcccg caacctgggt 360
 aaggtcatcg ataccctaac atgcggcttc gccgacctca tgggatacat cccgcttgta 420
 ggcgcccccg tgggtggcgt cgccagagcc ctggcacacg gtgttagggc tgtggaagac 480
 gggatcaact acgcaacag 499

<210> 164
 <211> 166
 <212> PRT
 <213> hepatitis C virus

<400> 164

Met Ser Thr Asn Pro Lys Leu Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro

115

120

125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met
 180 185 190

Ala

<210> 197
 <211> 1485
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (787)..(787)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (1011)..(1011)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (1444)..(1444)
 <223> "n" is any nucleotide

<400> 197
 tgtgccagga ccaccaccac cggagcttct atcacatact ccacttacgg caagttcctt 60
 gctgatggag ggtgttcagg cggcgcgcat gacgtgatca tatgcgacga gtgccattcc 120
 caggacgcca ccaccattct tgggataggc actgtccttg accaggcaga gacggctgga 180
 gctaggctcg tcgtcttggc cacggccacc cctcccggca gtgtgacaac gccccacccc 240
 aacatcgagg aagtggccct gcctcaggag ggggaggttc ccttctacgg cagagccatt 300

ccccttgctt ttataaaggg tggtaggcat ctcattcttct gccattccaa gaaaaaatgt	360
gatgaactcg ccaagcaact gaccagcctg ggcgtgaacg ccgtggcata ttatagaggt	420
ctagacgtcg ccgtcatacc cacaacagga gacgtggctg tgtgcagcac cgacgcgtc	480
atgacgggat tcaccggcga ctttgattct gtcatagact gcaactccgc cgtcactcag	540
acggtggact tcagtctgga tcccactttt accattgaga ctaccacagt gccccaggac	600
gcagtgtcca gaagccagcg ttggggccgc acggggagag gtaggcacgg catataccgg	660
tatgtctcgg ctggagagag accgtctggc atgttcgact ccgtggtgct ctgtgagtgc	720
tacgatgccg gatgtgcatg gtacgatctg actcctgccg agactaccgt gaggttgccg	780
gcttacntaa acacccccgg gctccctgtc tgtcaggacc atttggaatt ctgggagggg	840
gtgttcacgg ggctcactaa catcgacgt cacatgctgt cacagaccaa acagggtggg	900
gagaatttcc cataccttgt agcgtaccaa gcaacagtct gtgttcgcgc gaaagcgccc	960
ccccccagct gggacacaat gtggaaatgc atgctccgtc tcaaaccgac nttactggc	1020
cctactcccc tcttgtagag gctggggccc gtccagaatg agatcacact gacgcacccc	1080
atcaccaagt acattatggc ttgcatgtct gcggacttgg aggtcattac cagcacttgg	1140
gttctgggtg ggggcgttgt ggcggccctg gcggcctact gcttgacggg gggttcggta	1200
gccatagtcg gtaggatcat cctctctggg aaacctgcc tcatccccga tagggaggta	1260
ttataaccagc aatttgatga gatggaggag tgctcggcct cgttgccta tatggacgaa	1320
acacgtgcc ttgccggaca attcaaagag aaagtgctcg gcttcatcag cacgaccggc	1380
cagaaggctg aaactctgaa gccggcagcc acgtctgtgt ggaacaaggc tgagcagttc	1440
tggnccacat acatgtggaa cttcatcagt gggatacaat aatag	1485

<210> 198
 <211> 484
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (263)..(263)
 <223> "Xaa" is any amino acid

<220>
 <221> MISC_FEATURE
 <222> (337)..(337)
 <223> "Xaa" is any amino acid

<220>

<221> MISC_FEATURE

<222> (482)..(482)

<223> "Xaa" is any amino acid

<400> 198

Cys Ala Arg Thr Ile Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr
1 5 10 15

Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala His Asp Val
20 25 30

Ile Ile Cys Asp Glu Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly
35 40 45

Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val
50 55 60

Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro
65 70 75 80

Asn Ile Glu Glu Val Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr
85 90 95

Gly Arg Ala Ile Pro Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile
100 105 110

Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Lys Gln Leu Thr
115 120 125

Ser Leu Gly Val Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ala
130 135 140

Val Ile Pro Thr Thr Gly Asp Val Val Val Cys Ser Thr Asp Ala Leu
145 150 155 160

Met Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Ser
165 170 175

Ala Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile
180 185 190

Glu Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Trp
195 200 205

Gly Arg Thr Gly Arg Gly Arg His Gly Ile Tyr Arg Tyr Val Ser Ala
210 215 220

Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Val Val Leu Cys Glu Cys
225 230 235 240

Tyr Asp Ala Gly Cys Ala Trp Tyr Asp Leu Thr Pro Ala Glu Thr Thr
245 250 255

Val Arg Leu Arg Ala Tyr Xaa Asn Thr Pro Gly Leu Pro Val Cys Gln
260 265 270

Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr Asn Ile
275 280 285

Asp Ala His Met Leu Ser Gln Thr Lys Gln Gly Gly Glu Asn Phe Pro
290 295 300

Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Val Arg Ala Lys Ala Pro
305 310 315 320

Pro Pro Ser Trp Asp Thr Met Trp Lys Cys Met Leu Arg Leu Lys Pro
325 330 335

Xaa Leu Thr Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln
340 345 350

Asn Glu Ile Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys
355 360 365

Met Ser Ala Asp Leu Glu Val Ile Thr Ser Thr Trp Val Leu Val Gly
370 375 380

Gly Val Val Ala Ala Leu Ala Ala Tyr Cys Leu Thr Val Gly Ser Val
385 390 395 400

Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Ile Ile Pro
405 410 415

Asp Arg Glu Val Leu Tyr Gln Gln Phe Asp Glu Met Glu Glu Cys Ser

420

425

430

Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln Phe
 435 440 445

Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln Lys Ala Glu
 450 455 460

Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala Glu Gln Phe
 465 470 475 480

Trp Xaa Thr Tyr

<210> 199
 <211> 1485
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (684)..(684)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (909)..(909)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (1058)..(1058)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (1133)..(1133)
 <223> "n" is any nucleotide

<400> 199
 tgtgccagga ccataccac cggagcttct atcacatact ccacttacgg caagttcctt 60
 gctgatggag ggtgttcagg cggcgcgtat gacgtgatca tatgcgacga gtgccattcc 120
 caggacgcca ccaccattct tgggataggc actgtccttg accaggcaga gacggctgga 180
 gctaggctcg tcgtcttggc cacggccacc cctcccgga gtgtgacaac gccccacccc 240

aacatcgagg aagtggccct gcctcaggag ggggaggttc ctttctacgg cagagccatt	300
cccccttgctt ttataaaggg tggtaggcat ctcattcttct gccattccaa gaaaaaatgt	360
gatgaactcg ccaagcaact gaccagcctg ggcgtgaacg ccgtggcata ttatagaggt	420
ctagacgtcg ccgtcatccc cacagcagga gacgtggctg tgtgcagcac cgacgcgctc	480
atgacgggat tcaccggcga ctttgattct gtcatagact gcaactccgc cgtcactcag	540
acggtggact tcagtctgga tcccactttt accattgaga ctaccacagt gccccaggac	600
gcagtgtcca gaagccagcg taggggcccgc acggggagag gtaggcacgg catataccgg	660
tatgtctcgg ctggagagag accntctgac atgttcgact ccgtgggtgt ctgtgagtgc	720
tacgatgccg gatgtgcgtg gtatgatctg actcctgccg agactaccgt gaggttgccg	780
gcttacataa acacccccgg gctccctgtc tgtcaggacc atttggaatt ctgggagggg	840
gtgttcacgg ggctcactaa catcgacgtt cacatgctgt cacagaccaa acaggggtggg	900
gagaatttnc cataccttgt agcgtaccaa gcaacagtct gtgttcgcgc gaaagcgccc	960
ccccccagct gggacacaat gtggaaatgc atgctccgtc tcaaaccgac tttaactggc	1020
cctactcccc tcttgtacag gctggggccc gtccagantg agatcacact gacgcacccc	1080
atcaccaagt acattatggc ttgcatgtct gcggacttgg aggtcattac cancacttgg	1140
gttctggtgg ggggcgttgt ggcgccctg gcggcctact gcttgacggg ggggttcggta	1200
gccatagtcg gtaggatcat cctctctggg aaacctgcc tcatcccgga tagggaggca	1260
ttataccagc aatttgatga gatggaggag tgctcggcct cgttgcccta tatggacgag	1320
acacgtgcc a ttgccggaca attcaaagag aaagtgctcg gcttcacag cacgaccggc	1380
cagaaggctg aaactctgaa gccggcagcc acgtctgtgt ggaacaaggc tgagcagttc	1440
tgggccacat acatgtggaa cttcatcagc gggatacaat aatag	1485

<210> 200
 <211> 484
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (228)..(228)
 <223> "Xaa" is any amino acid

<220>
 <221> MISC_FEATURE
 <222> (303)..(303)

<223> "Xaa" is any amino acid

<220>

<221> MISC_FEATURE

<222> (353)..(353)

<223> "Xaa" is any amino acid

<220>

<221> MISC_FEATURE

<222> (378)..(378)

<223> "Xaa" is any amino acid

<400> 200

Cys Ala Arg Thr Ile Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr
1 5 10 15

Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Val
20 25 30

Ile Ile Cys Asp Glu Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly
35 40 45

Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val
50 55 60

Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro
65 70 75 80

Asn Ile Glu Glu Val Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr
85 90 95

Gly Arg Ala Ile Pro Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile
100 105 110

Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Lys Gln Leu Thr
115 120 125

Ser Leu Gly Val Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ala
130 135 140

Val Ile Pro Thr Ala Gly Asp Val Val Val Cys Ser Thr Asp Ala Leu
145 150 155 160

Met Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Ser
165 170 175

Ala Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile
180 185 190

Glu Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg
195 200 205

Gly Arg Thr Gly Arg Gly Arg His Gly Ile Tyr Arg Tyr Val Ser Ala
210 215 220

Gly Glu Arg Xaa Ser Asp Met Phe Asp Ser Val Val Leu Cys Glu Cys
225 230 235 240

Tyr Asp Ala Gly Cys Ala Trp Tyr Asp Leu Thr Pro Ala Glu Thr Thr
245 250 255

Val Arg Leu Arg Ala Tyr Ile Asn Thr Pro Gly Leu Pro Val Cys Gln
260 265 270

Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr Asn Ile
275 280 285

Asp Ala His Met Leu Ser Gln Thr Lys Gln Gly Gly Glu Asn Xaa Pro
290 295 300

Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Val Arg Ala Lys Ala Pro
305 310 315 320

Pro Pro Ser Trp Asp Thr Met Trp Lys Cys Met Leu Arg Leu Lys Pro
325 330 335

Thr Leu Thr Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln
340 345 350

Xaa Glu Ile Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys
355 360 365

Met Ser Ala Asp Leu Glu Val Ile Thr Xaa Thr Trp Val Leu Val Gly
370 375 380

Gly Val Val Ala Ala Leu Ala Ala Tyr Cys Leu Thr Val Gly Ser Val

100

105

110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp
 145 150 155 160

Gly Ile Asn Tyr Ala Thr
 165

<210> 165
 <211> 499
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (306)..(306)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (313)..(313)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (340)..(340)
 <223> "n" is any nucleotide

<400> 165
 atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgcccctatg 60
 gacgttaagt tcccaggcgg tggtcagatc gttggcggag tttacttggt gccgcgcagg 120
 ggccccaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180
 aggcgcacaac ctatcccaaa ggcgcgccga accgagggca gatcctgggc gcagcccggg 240
 tatccttggc ccctttacgg caatgagggc tgtgggtggg caggggtggc cctgtcccct 300
 cgcggncttc gngcgtcttg gggccccaat gatccccggn ggagatcccg caacttgggt 360
 aaggtcatcg ataccctaac atgcggcttc gccgacctca tgggatacat cccgcttgta 420

ggcgcccccg tgggtggcgt cgccagggcc ctggcacatg gtgttagggc tgtggaagac 480

gggatcaatt atgcaacag 499

<210> 166
<211> 126
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (102)..(102)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (105)..(105)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (114)..(114)
<223> "Xaa" is any amino acid

<400> 166

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Xaa Ser Arg Xaa Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu
 115 120 125

<210> 167
 <211> 579
 <212> DNA
 <213> hepatitis C virus

<400> 167
 acatgcggtt tgcggacgt catgggatac atcccgttg taggcgcccc cgtgggtggc 60
 gtcgccaggg ccctggcaca tgggtgttagg gctgtggaag acgggatcaa ttatgcaaca 120
 gggaaccttc ccggttgctc cttttctatc ttctcttgg cgtcctctc gtgcctgact 180
 gttcccatat cggccgttaa ctatcgcaat gcttcgggca tttatcacat caccaatgac 240
 tgcccgaatg caagcatagt gtacgagacc gaaaatcaca tcttacacct cccagggtgc 300
 gtacctgtg tgaggactgg gaaccagtcg cgggtgttggg tggccctcac tcccacagta 360
 gcgtcgccat acgccggtgc tccgcttgag cccttgcggc gtcattgtga cctgatggta 420
 ggtgctgcca ccatgtgttc cgcctctac atcggcgact tgtgcggtgg cttattcttg 480
 gtgggcaaaa tggtcacctt ccaaccgga cgtcactgga ccactcagga ctgcaattgt 540
 tccatctaca cgggccacat tacgggtcat cggatggca 579

<210> 168
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 168

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro
115 120 125

Leu Glu Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Met Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 169
<211> 579
<212> DNA
<213> hepatitis C virus

<400> 169
acatgcggct tcgcgcacct catgggatac atcccgttg taggcgcgcc cgtgggtggc 60
gtgccagag ccctggcaca cgggtgttagg gctgtggaag acgggatcaa ctacgcaaca 120
gggaatctcc ccggttgctc cttttctatc ttctcttg cacttctctc gtgcctcact 180
gttccccggt cgggcgttaa ctatcgcaat gtttcgggcg tttatcacat caccaacgac 240
tgcccgaatg cgagcatagt gtacgagacc gacaatcaca tcttacacct cccagggtgc 300
gtaccctgtg tgaagaccgg gaaccagtcg cgggtgtggg tggccctcac tcccacagtg 360
gcgtgcctt acgtcgggtgc tccgctcgag cccttgccgc gccatgtgga cctgatggta 420
gggtgctgcca ccgtgtgctc cgccctctac gtcggcgacc tgtgcggtgg cttattcttg 480
gtaggcaaaa tgttcacctt ccaaccgga cgccactgga cgaccagga ctgtaattgt 540

tccatctacg cagggcatat tacgggccat cggatggct

579

<210> 170
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 170

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Gly Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp
65 70 75 80

Cys Pro Asn Ala Ser Ile Val Tyr Glu Thr Asp Asn His Ile Leu His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 171
<211> 579
<212> DNA
<213> hepatitis C virus

<400> 171
acatgcggct tcgcgcacct catgggatac atcccgttg tggcgcccc tgttggtggc 60
gtcgccagag cccttgcgca cggcgtcagg gctgtggaag acgggattaa ctatgcaaca 120
gggaaccttc ctggttgctc cttttctatc ttccttctgg cacttctctc gtgcctgact 180
gtccccgcct cggtgtgca ttatcacaac acctcgggca tctaccacct caccaatgac 240
tgccctaact ctagcatagt ctttgaggca gtccatcaca tcttgacact tccaggatgc 300
gtcccttggtg taagaactgg gaaccagtct cgggtgtggg tagccttgac cccacgctg 360
gccgcgccat accttggcgc tccactcgag tccatgcggc gtcacgtgga tttgatggtg 420
ggcactgcta cattgtgctc agcactctac gttggggacc tgtgcggggg catattccta 480
gcgggccaga tgttcacctt ccggccccgc ctccattgga ccaccagga gtgcaattgt 540
tccacctatc cgggccacat cacgggtcat agaatggcg 579

<210> 172
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 172

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Leu Thr Asn Asp

65		70		75		80									
Cys	Pro	Asn	Ser	Ser	Ile	Val	Phe	Glu	Ala	Val	His	His	Ile	Leu	His
				85					90					95	

Leu	Pro	Gly	Cys	Val	Pro	Cys	Val	Arg	Thr	Gly	Asn	Gln	Ser	Arg	Cys
			100					105					110		

Trp	Val	Ala	Leu	Thr	Pro	Thr	Leu	Ala	Ala	Pro	Tyr	Leu	Gly	Ala	Pro
		115					120					125			

Leu	Glu	Ser	Met	Arg	Arg	His	Val	Asp	Leu	Met	Val	Gly	Thr	Ala	Thr
		130				135					140				

Leu	Cys	Ser	Ala	Leu	Tyr	Val	Gly	Asp	Leu	Cys	Gly	Gly	Ile	Phe	Leu
145					150					155					160

Ala	Gly	Gln	Met	Phe	Thr	Phe	Arg	Pro	Arg	Leu	His	Trp	Thr	Thr	Gln
				165					170					175	

Glu	Cys	Asn	Cys	Ser	Thr	Tyr	Pro	Gly	His	Ile	Thr	Gly	His	Arg	Met
		180						185				190			

Ala

<210> 173
 <211> 579
 <212> DNA
 <213> hepatitis C virus

<400> 173	
acgtgcggtt ccgccgacct catgggatac atcccgcctcg taggcgcccc tgtgggtggc	60
gtgccaggg ccttggcgca tggcgctcagg gctgtggagg acgggataaa ctatgcaaca	120
gggaaccttc ctggttgctc tttttctatc ttccctcttg cacttctctc gtgcctgact	180
gtccccgcct cagctgtgca ttatcacaac acctcgggca tctatcacat cactaatgac	240
tgcctaact ctagcatagt ctttgaggca gagcatcaca tcttgcatct tccaggatgc	300
gtccctgtg tgagaactgg gaaccagtca cgatgctgga tagccttgac ccctacgttg	360
gccgcgccac acattggcgc tccacttgag tccatgcgac gtcattgtgga tttgatggta	420
ggcactgccca cattgtgctc cgcactctac attggagatc tgtgcggagg catatttcta	480

gtgggccaga tgttcaactt caggccccgc ctgcactgga ccaccagga gtgcaattgt 540
 tccatctatc caggccacat cacgggtcac agaattggcg 579

<210> 174
 <211> 193
 <212> PRT
 <213> hepatitis C virus
 <400> 174

Thr Cys Gly Ser Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Glu His His Ile Leu His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys
 100 105 110

Trp Ile Ala Leu Thr Pro Thr Leu Ala Ala Pro His Ile Gly Ala Pro
 115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ile Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Asn Phe Arg Pro Arg Leu His Trp Thr Thr Gln
 165 170 175

Glu Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met

Ala

<210> 175
 <211> 579
 <212> DNA
 <213> hepatitis C virus

<400> 175
 acgtgcggtt ttgccgacct catgggatac atcccgtctg tgggcgcccc tgtgggtggc 60
 gtgcgccagg ccttggcaca tgggtgtcagg gccgtggagg acgggattaa ctatgcaaca 120
 gggaatcttc ccggttgctc cttttctatc ttccttctag cacttctctc gtgcttgact 180
 gtcccggcct cggcgagca ctaccggaac atctcgggca tttatcacgt caccaatgac 240
 tgcccgaaact ctagtatagt gtatgaagct gaccatcata tcatgcatct accagggtgt 300
 gtgccttgcg tgagaaccgg gaacacctcg cgctgctggg ttcctttaac acccactgtg 360
 gctgccccct atgttggcgc gccgctcgaa tccatgcggc ggcacgtgga cttaatgggtg 420
 ggtgccgcca ccgtctgctc ggccctgtac atcggagacc tttgcggagg tgtcttcctg 480
 gtccgggcaga tgttcacctt ccggccgcgc cgccattgga ctaccagga ctgcaactgc 540
 tctatctatg atggccacat caccggccat agaattggt 579

<210> 176
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 176
 Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15
 Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30
 Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45
 Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 177
<211> 579
<212> DNA
<213> hepatitis C virus

<400> 177
acgtgcgggt tcgccgacct catgggatac atcccgcctcg tgggcgctcc agtaggaggc 60
gtcgccagag ccttggcgca tggcgctcagg gctgtggagg acgggatcaa ttacgcaaca 120
gggaaccttc ccggctgctc cttttctatc ttctcttgg tacttctctc ggcctaact 180
gtcccagcgt ctgctcagca ctaccggaat gcatcgggca tctaccatgt caccaacgac 240
tgcccgaact ccagtattgt gtatgaagcc gaccatcaca tcatgcacct acccgggtgt 300
gtgccctgtg taagaactgg gaatgtctcg cgttgctgga ttcctttaac acccactgta 360
gccgtcccct acctcggggc tccacttacg tctgtacggc agcatgtgga cctgatggtg 420
ggggcggccca ccttatgctc tgccctctac atcggagacc attgcggagg tgtcttcttg 480

gcagggcaga tggtcagttt ccaacccccgg cgtcattgga ctaccagga ttgcaactgt 540
 tccatctatg tgggccacat caccggccac aggatggcc 579

<210> 178
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 178

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Val Leu Leu Ser Arg Leu Thr Val Pro Ala Ser
 50 55 60

Ala Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys
 100 105 110

Trp Ile Pro Leu Thr Pro Thr Val Ala Val Pro Tyr Leu Gly Ala Pro
 115 120 125

Leu Thr Ser Val Arg Gln His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp His Cys Gly Gly Val Phe Leu
 145 150 155 160

Ala Gly Gln Met Val Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 179
<211> 579
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (568)..(579)
<223> "n" is any nucleotide

<400> 179
acctgcggtc tcgccgacct catgggatac atcccgcctc taggcgcccc cgtgggagggc 60
gtcgccagar ctctggcgca tggcgtcagg gctctggaag acgggatcaa ttatgcaaca 120
gggaatcttc ctggttgctc tttctctatc tcccttcttg aacttctctc gtgcctgact 180
gttcccgctt cagccatcca ctatcgcaat gcttcggacg gttattatat caccaatgat 240
tgcccgaact ctagcatagt gtatgaagcc gagaaccaca tcttgcacct tccgggggtgt 300
ataccctgtg tgaagaccgg gaatcagtcg cgggtgctggg tggtctctac cccacgctg 360
gcgccccac acctacgtgc tccgctttcg tccttacggg cgcattgtgga cctaattggtg 420
ggggccgcca cggcatgctc cgctttttac attggagatc tgtgcggggg tgtgtttttg 480
gcggggccaac tgttcactat ccggccacgc attcatgaaa ccactcagga ctgcaattgc 540
tccatctact cagggcacat cacgggtnnn nnnnnnnnn 579

<210> 180
<211> 193
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (190)..(193)
<223> "Xaa" is any amino acid

<400> 180

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Xaa Leu Ala His Gly Val Arg Ala Leu
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Ser Leu Leu Glu Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Ile His Tyr Arg Asn Ala Ser Asp Gly Tyr Tyr Ile Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Glu Asn His Ile Leu His
85 90 95

Leu Pro Gly Cys Ile Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro His Leu Arg Ala Pro
115 120 125

Leu Ser Ser Leu Arg Ala His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Ala Cys Ser Ala Phe Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Ala Gly Gln Leu Phe Thr Ile Arg Pro Arg Ile His Glu Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ser Gly His Ile Thr Gly Xaa Xaa Xaa
180 185 190

Xaa

<210> 181

<211> 579

<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (152)..(152)
<223> "n" is any nucleotide

<400> 181
gcgtgaggct tcgccgatct catgggatac atcccgctcg taggcgcccc cgtgggtggc 60
gtcgccagag ccttggcgca cgggtgtagg gctgtggagg acgggattaa ctacgcaaca 120
gggaatcttc ctgggtgctc tttctctatc tnccttctgg cacttctctc gtgcctgact 180
gtcccggcct cggctcagca ctaccggaat gtctcgggca tctaccacgt caccaatgat 240
tgcccggaatt ccagcatagt gtatgaagcc gatcaccaca tcatgcactt accaggggtgc 300
ataccctgcg tgaggaccgg gaacgtttcg cgctgctggg tatctctgac acctactgtg 360
gctgctccct acctcggggc tccgcttacg tcgctacggc ggcattgtgga tttgatgggtg 420
gggtgcagca ccccttgctc tgccctctac gtccgagacc tctgtggagg tgtcttcta 480
gtgggacaga tgttcacctt ccagccgcgc cgccactgga ccactcagga ctgcaactgc 540
tccatttacg tcggccacat cacaggccac agaattggt 579

<210> 182
<211> 193
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (51)..(51)
<223> "Xaa" is any amino acid

<400> 182
Ala Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15
Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30
Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45
Ser Ile Xaa Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser

50

55

60

Ala Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Ile Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys
100 105 110

Trp Val Ser Leu Thr Pro Thr Val Ala Ala Pro Tyr Leu Gly Ala Pro
115 120 125

Leu Thr Ser Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 183
<211> 579
<212> DNA
<213> hepatitis C virus

<400> 183
acctgagggt ttgccgacct catgggatac atcccgtctg taggcgcccc tgtgggtggc 60
gtcgccaggg ccctagaaca cgggtgttagg gctgtggagg acggtattaa ttatgcaaca 120
gggaatctcc ccggttgcct tttttctatc tccctcttgg cacttctttc gtgcctgact 180
gttcccaact cagccgtcaa ctatcgcaac gcctcggggc tctatcatat caccaatgac 240
tgccgaatt cgagcatagt gtacgaggct gactaccaca tctacacct ccctgggtgc 300
ttaccctgcg tgagggttgg gaatcagtcg cgctgctggg tggcccttac tcccacgtg 360

gcggcgcctt acgttggtgc tccgctagaa tccctccgga gtcattgtgga tctgatggta 420
 ggtgctgcta ctgtgtgctc cgctctttac atcggggacc tgtgcggtgg cgtatttttg 480
 gttggtcaga tgttttcttt ccagccgcga cgccactgga ccacgcagga ctgcaattgt 540
 tctatctacg cggggcacgt tacgggccac aggatggca 579

<210> 184
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 184

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys
 100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro
 115 120 125

Leu Glu Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Met Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln

165

170

175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met
 180 185 190

Ala

<210> 185
 <211> 579
 <212> DNA
 <213> hepatitis C virus

<400> 185
 acttgcggtt ttgccgacct catgggatac atcccgcctcg taggcgcccc cgtgggtggc 60
 gtcgccagag ccctggaaca tgggtgttagg gctgtggagg acggcatcaa ttatgcaaca 120
 gggaaatctcc ccggttgctc tttctctatc tacctcttgg cacttctctc gtgcctgact 180
 gttcccacct cggccatcca ctatcgcaat gcctcgggcg tctaccacgt caccaatgac 240
 tgcccgaact cgagcatagt gtacgaggcc gaccaccaca tcctacacct tccaggggtgc 300
 ttaccctgtg tgagggttgg gaatcagtcg cgttgttggg tggccctctc tcccaccgtg 360
 gcggcgccctt acatcggtgc tccagttgaa tccttcgga gacacgtgga catgatgggtg 420
 ggcgctgcta ctgtgtgctc cgctctctat attggggact tgtgtgggtgg cgtattcttg 480
 gttggtcaga tgttttcttt ccggccacga cgccactgga ctacgcagga ctgcaattgt 540
 tccatctacg cggggcacat cactggccac ggaatggca 579

<210> 186
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 186

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Glu His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Tyr Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
50 55 60

Ala Ile His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His
85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Ser Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro
115 120 125

Val Glu Ser Phe Arg Arg His Val Asp Met Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Gly Met
180 185 190

Ala

<210> 187
<211> 579
<212> DNA
<213> hepatitis C virus

<400> 187
acttgccggt ttgccgacct catgggatac atcccgtctg taggcgcccc tgtgggtggc 60
gtcgccaggg ccttggcaca cgggtgttagg gctgtggagg acgggatcaa ttatgcgaca 120
gggaatcttc ccggttgctc tttctctatc ttctcttgg cacttcttcc gtgcctgact 180
gttcccaact cggccgtcaa ctatcgcaat gcctcgggca tctatcacat caccaatgac 240
tgcccgaact cgagcatagt gtacgagacc gagcaccaca tcctacacct cccaggggtg 300
ttaccctgcg tgagggttgg gaatcagtca cgctgctggg tggccctcac tcccaccgtg 360

gcggcgcctt acatcgggcgc tccgcttgaa tccctccgga gtcattgtga tctgatggta 420
 ggtgccgcta ctgcgtgctc cgctctttac atcggagacc tgtgcggtgg cgtatttttg 480
 gttggtcaga tgttctcttt ccagccgcgg cgccactgga ctacgcagga ctgcaattgt 540
 tccatctacg cggggcacgt tacgggccac aggatggca 579

<210> 188
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 188

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His
 85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys
 100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro
 115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Ala Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met
 180 185 190

Ala

<210> 189
 <211> 579
 <212> DNA
 <213> hepatitis C virus

<400> 189
 acgtgcggt tcgccgacct catgggatac atcccgctcg tgggcgcccc cgttgggggc 60
 gtcgccaggg ccctggcgca tggcgtcagg gctgtggagg acgggattaa ctatgcgaca 120
 gggaaatcttc ccggttgctc tttctctatc ttctctctgg cacttctttc gtgcctcact 180
 gtcccagcgt cagctgagca ctaccggaat gtttcgggca tctatcacat caccaatgac 240
 tgtccgaatt ccagcgtagt ctatgaaact gaccaccata tattgcactt gccgggggtgc 300
 gtaccctgcg tgagggccgg gaacgtgtct cgttgctgga cgccggtaac acctacggtg 360
 gctgccgtat ccatggaagc tccgctcgag tccttcgggc ggcattgtgga cctaattgga 420
 ggtgcccga cagtgtgttc tgcctctat gttggagacc tctgtggagg tgctttccta 480
 gtggggcaga tgttcacctt ccagccgct cgccactgga ccacgcagga ttgtaattgc 540
 tccatctata ctggccatat caccggccac aggatggcg 579

<210> 190
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 190

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
 50 55 60

Ala Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys
 100 105 110

Trp Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro
 115 120 125

Leu Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Val Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu
 145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met
 180 185 190

Ala

<210> 191
 <211> 289
 <212> DNA
 <213> hepatitis C virus

<400> 191
 atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgccccatg 60
 gacgttaagt tccccgggcgg tggccagatc gttggtggag tttacttggt gccgcgcagg 120
 ggccccaggt tgggtgtgcg cgcgactagg aagacttcgg agcggtcgca acctcgtggg 180
 agacgtcagc ctatcccca ggcacgtcga tctgagggaa ggtcctgggc tcagccccggg 240
 taccatggc ctctttacgg taatgagggt tgtgggtggg caggatggg 289

<210> 192
 <211> 96
 <212> PRT
 <213> hepatitis C virus

<400> 192

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

<210> 193
 <211> 498
 <212> DNA
 <213> hepatitis C virus

<400> 193

atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgccctatg 60
 gacgtaaagt tcccggggcgg tggacagatc gttggcggag tttacttggt gccgcgcagg 120
 ggcccccggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggc 180
 aggcgtcaac ctatcccca ggcgcgccgg tccgagggca ggtcctgggc gcaagccggg 240
 taccctggc ccctctatgg caatgagggc tgtgggtggg caggggtggct cctgtctcct 300
 cgcggctctc ggccatcttg gggcccaa at gatccccggc ggagatcgcg caatctgggt 360
 aaggtcatcg ataccctgac gtgcggcttc gccgacctca tgggatacat cccgctcgtg 420
 ggcgcccccg tcggggggcgt cgccagggcc ctggcgcatg gcgtcagggc tgtggaggac 480
 gggattaact atcgacag 498

<210> 194
<211> 166
<212> PRT
<213> hepatitis C virus

<400> 194

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Ala Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp
145 150 155 160

Gly Ile Asn Tyr Arg Gln
165

<210> 195
<211> 579
<212> DNA
<213> hepatitis C virus

<400> 195

acgtgcggaat tgcgcgacct cgtgggggtac atcccgcctcg taggcggccc cgttgggggc 60
gtcgcaaggg ctctcgaca tgggtgtgagg gttcttgagg acggggtgaa ttatgcaaca 120
gggaatctgc ctgggtgctc tttctctatc ttcattcttg cacttctctc gtgcctcact 180
gtcccggcct ctgcagttcc ctaccgaaat gcctctggga tctatcatgt caccaatgat 240
tgcccaaact cttccatagt ctatgaggca gatgatctga tctacacgc acctggctgc 300
gtgccttggtg tcaggaaaga taatgtgagt aggtgctggg tccaaattac cccacgctg 360
tcagccccga gcttcggagc agtcacggct ccccttcgga gagccgttga ttacttggtg 420
ggaggggctg ccctctgctc cgcgttatac gttggagacg cgtgtggggc actatTTTTg 480
gtaggccaaa tgttcaccta taggcctcgc cagcatgcta cgggtgcagga ctgcaactgt 540
tccatctaca gtggccacgt caccggccat cagatggca 579

<210> 196
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 196

Thr Cys Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Gly
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu
20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His
85 90 95

Ala Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys
100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
 100 105 110

Ala

<210> 203
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 203
 ctccacagt actgaaagag acatcagggt cgaggaagag gtctaccagt gttgtgacct 60
 ggagcctgaa acccgcaagg taatatctgc cctcactgaa agactctatg tgggcggtcc 120
 catgcacaac agcaggggag acctatgcgg gtaccgtaga tgccgcgcga gcggcggtata 180
 caccacaagc ttcgggaaca ctctgacgtg cttcctcaag gccacagcgg ccaccaaagc 240
 cgctggccta aaggactgca ccatgttggt gtgtggtgac gacttagtcg ttatcgccga 300
 aagcgatggt gtcgaagagg accgccgagc cctcggagct 340

<210> 204
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 204

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Thr Arg Lys Val Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Phe Leu Lys Ala Thr Ala Ala Thr Lys Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Arg Arg Ala Leu Gly
 100 105 110

Ala

<210> 205
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 205
 ctccacggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60
 ggagcccgaa gcccgaagg tgatatccgc cctaacggaa agactctacg tgggcggtcc 120
 catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcggggtcta 180
 caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgcg ctactagggc 240
 cgcaggtctg aaagggtgca gcatgctggt ttgtggagac gacttagtcg tcatctgcga 300
 gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 206
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 206

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala
 65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
 100 105 110

Ala

<210> 207
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 207
 ctccacggtg actgaaaggg acattagggg cgaggaagag atctaccagt gctgtgacct 60
 ggagcccgag gcacgcaagg tgatatccgc tctcacagaa agactctaca agggcgggccc 120
 catgtataac agcaaggggg acctatgcgg gcttcggagg tgccgcgcaa gcggggtata 180
 caccacaagc ttcgggaaca cggtgacatg ctaccttaaa gccacagcag ccaccagggc 240
 tgcagggctg aaagattgca ctatgctggt atgcggtgac gacttagtcg ttattgccga 300
 aagcgggtggc gtggaggagg acgcccagag cctccgagcc 340

<210> 208
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 208

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln

1 5 10 15
 Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
 20 25 30
 Glu Arg Leu Tyr Lys Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
 35 40 45
 Cys Gly Leu Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60
 Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
 65 70 75 80
 Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95
 Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
 100 105 110
 Ala

<210> 209
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (13)..(13)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (23)..(23)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (65)..(65)
 <223> "n" is any nucleotide

<220>
 <221> misc_feature
 <222> (72)..(72)

<223> "n" is any nucleotide .

<220>

<221> misc_feature

<222> (277)..(277)

<223> "n" is any nucleotide

<220>

<221> misc_feature

<222> (337)..(337)

<223> "n" is any nucleotide

<400> 209

ccccaccgtg acngagagggg acntcagggg cgaggaagag gtctatcagt gctgtaatct 60

ggagnccgat gnccgcaagg tcatcaacgc cctcacagag agactctacg tgggcggccc 120

tatgcacaac agcaagggag acctgtgtgg catccgtaga tgccgcgcga gcggcggttta 180

caccacgagc ttccgaaaca cgctgacttg ctacctcaa gccacagcgg ccaccagggc 240

cgcgggcttg aaggattgca ccatgctggt ctgcgngac gacctgggtg tcattgctga 300

gagcattggc atagacgagg acaagcaagc cctccgnact 340

<210> 210

<211> 113

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> "Xaa" is any amino acid

<220>

<221> MISC_FEATURE

<222> (22)..(22)

<223> "Xaa" is any amino acid

<220>

<221> MISC_FEATURE

<222> (24)..(24)

<223> "Xaa" is any amino acid

<400> 210

Pro Thr Val Thr Glu Arg Asp Xaa Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asn Leu Glu Xaa Asp Xaa Arg Lys Val Ile Asn Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Ile Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ile Gly Ile Asp Glu Asp Lys Gln Ala Leu Arg
100 105 110

Thr

<210> 211
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (11)..(11)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (327)..(327)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (333)..(334)
<223> "n" is any nucleotide

<220>
<221> misc_feature
<222> (340)..(340)
<223> "n" is any nucleotide

<400> 211
ctcgactgtg nccgagaggg acatcaggac agagggagag gtctatcagt gttgcgacct 60
ggaaccggaa gcccgcaagg taatcaccgc cctcactgag agactctatg tgggcggacc 120
catgttcaac agcaagggag acctgtgcgg acaacgccgg tgccgcgcaa gcggcgtggt 180
caccaccagc ttcgggaaca cactgacgtg ctaccttaaa gccacagctg ctactagagc 240
agccggctta aaagattgca ccatgctggt ctgcggtgac gacttagtcg ttatttccga 300
gagcgccggt gtggaggagg atcccanaac ccnncgaccn 340

<210> 212
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (109)..(109)
<223> "Xaa" is any amino acid

<220>
<221> MISC_FEATURE
<222> (111)..(111)
<223> "Xaa" is any amino acid

<400> 212

Ser Thr Val Xaa Glu Arg Asp Ile Arg Thr Glu Gly Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala

65

70

75

80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Ala Gly Val Glu Glu Asp Pro Xaa Thr Xaa Arg
 100 105 110

Pro

<210> 213
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 213
 ctcaacagtc accgagaacg acatccgtgt tgaggagtca atttaccat gttgtgactt 60
 ggcccccgag gccagacagg ccataaagtc gctcacagag cggtttata tcgggggtcc 120
 cctgactaat tcaaaggggc agaactgtgg ctatgccga tgccgcgcaa gcggcgtgct 180
 gacgaccagc tgcggttaata cccttacatg ttacctaaag gcctctgcag cctgtcgagc 240
 tgccaagctc caggactgca cgatgctcgt gtgcggggac gaccttgctg ttatctgtga 300
 aagcgcgga acccaagagg acgcggcgag cctacgagtc 340

<210> 214
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 214

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg
100 105 110

Val

<210> 215
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 215
ctcaaccgtc acggagaggg atataagaac agaagaatcc atatatcaag cttgttccct 60
gccccaaagag gccagaactg tcatacactc gctcaccgag agactctacg tgggagggcc 120
catgataaac agcaaagggc aatcctgctg ttacaggcgt tgccgcgcaa gcggtgtttt 180
caccaccagc atggggaata ccatgacgtg ttacatcaaa gcccttgacg cgtgtaaagc 240
cgcagggatc gtggaccccg tcatgctggt gtgtggagac gacctggctg tcatctcgga 300
gagccagggt aacgaggagg acgagcgaaa cctgagagct 340

<210> 216
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 216

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ala Cys Ser Leu Pro Gln Glu Ala Arg Thr Val Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Ile Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Asn Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 217
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 217
ctcgactgtc actgaacagg acatcagggt ggaagaggag atatatcaat gctgcaacct 60
tgaaccggag gccaggaaag tgatctcctc cctcacggag cggttttact gcggaggccc 120
tatgtttaac agcaaggggg cccagtgtgg ttatcgccgt tgccgtgccg gtggagtctt 180
gcctaccagc tttggcaaca caatcacttg ttacatcaag gccacaacgg ccgcgaaggc 240
cgcaggcctc cggaacccgg actttcttgt ctgcggagat gatctgggtcg tgggtggctga 300
gagtgatggc gtcgacgagg atagagcagc cctgagagcc 340

<210> 218
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 218

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asn Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Ala Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Thr Ala Ala Lys Ala
65 70 75 80

Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Val Ala Glu Ser Asp Gly Val Asp Glu Asp Arg Ala Ala Leu Arg
100 105 110

Ala

<210> 219
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 219

Arg Ser Glu Gly Arg Thr Ser Trp Ala Gln
1 5 10

<210> 220
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 220

Arg Ser Glu Gly Arg Thr Ser Trp Ala Gln
1 5 10

<210> 221
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 221

Arg Thr Glu Gly Arg Thr Ser Trp Ala Gln
1 5 10

<210> 222
<211> 629
<212> DNA
<213> hepatitis C virus

<400> 222

Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu Gly Gly Val Leu
100 105 110

Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys Val Val Ile Val
115 120 125

Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val Pro Asp Lys Glu
130 135 140

Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys Ser Gln Ala Ala
145 150 155 160

Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln Phe Lys Glu Lys
165 170 175

Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln Ala Val Ile Glu
180 185 190

Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala Phe Trp His Lys
195 200 205

His

<210> 224
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 224

Ile His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile
1 5 10

<210> 225
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 225

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile
1 5 10

<210> 226
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 226

Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile
1 5 10

<210> 227
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 227

Val Asn Tyr His Asn Thr Ser Gly Ile Tyr His Leu
1 5 10

<210> 228
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 228

Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val
1 5 10

<210> 229
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 229

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val
1 5 10

<210> 230
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 230

Ile His Tyr Arg Asn Ala Ser Asp Gly Tyr Tyr Ile
1 5 10

<210> 231
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 231

Leu Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val

1 5 10

<210> 232
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 232

Val Trp Gln Leu Arg Ala Ile Val Leu His Val
1 5 10

<210> 233
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 233

Val Tyr Glu Ala Asp Tyr His Ile Leu His Leu
1 5 10

<210> 234
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 234

Val Tyr Glu Thr Asp Asn His Ile Leu His Leu
1 5 10

<210> 235
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 235

Val Tyr Glu Thr Glu Asn His Ile Leu His Leu
1 5 10

<210> 236
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 236

Val Phe Glu Thr Val His His Ile Leu His Leu
1 5 10

<210> 237
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 237

Val Phe Glu Thr Glu His His Ile Leu His Leu
1 5 10

<210> 238
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 238

Val Phe Glu Thr Asp His His Ile Met His Leu
1 5 10

<210> 239
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 239

Val Tyr Glu Thr Glu Asn His Ile Leu His Leu
1 5 10

<210> 240
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 240

Val Tyr Glu Ala Asp Ala Leu Ile Leu His Ala
1 5 10

<210> 241
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 241

Val Gln Asp Gly Asn Thr Ser Ala Cys Trp Thr Pro Val
1 5 10

<210> 242

<211> 13
<212> PRT
<213> hepatitis C virus

<400> 242

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 243
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 243

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 244
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 244

Val Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 245
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 245

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Ile Ala Leu
1 5 10

<210> 246
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 246

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Ile Ala Leu
1 5 10

<210> 247
<211> 13
<212> PRT

<213> hepatitis C virus

<400> 247

Val Lys Thr Gly Asn Ser Val Arg Cys Trp Ile Pro Leu
1 5 10

<210> 248

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 248

Val Lys Thr Gly Asn Val Ser Arg Cys Trp Ile Ser Leu
1 5 10

<210> 249

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 249

Val Arg Lys Asp Asn Val Ser Arg Cys Trp Val Gln Ile
1 5 10

<210> 250

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 250

Ala Pro Ser Phe Gly Ala Val Thr Ala Pro
1 5 10

<210> 251

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 251

Val Ser Gln Pro Gly Ala Leu Thr Lys Gly
1 5 10

<210> 252

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 252

Val Lys Tyr Val Gly Ala Thr Thr Ala Ser
1 5 10

<210> 253

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 253

Ala Pro Tyr Ile Gly Ala Pro Val Glu Ser
1 5 10

<210> 254

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 254

Ala Gln His Leu Asn Ala Pro Leu Glu Ser
1 5 10

<210> 255

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 255

Ser Pro Tyr Val Gly Ala Pro Leu Glu Pro
1 5 10

<210> 256

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 256

Ser Pro Tyr Ala Gly Ala Pro Leu Glu Pro
1 5 10

<210> 257

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 257

Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser
1 5 10

<210> 258
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 258

Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser
1 5 10

<210> 259
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 259

Ala Pro Tyr Val Gly Ala Pro Leu Glu Ser
1 5 10

<210> 260
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 260

Asn Val Pro Tyr Leu Gly Ala Pro Leu Thr Ser
1 5 10

<210> 261
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 261

Ala Pro His Leu Arg Ala Pro Leu Ser Ser
1 5 10

<210> 262
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 262

Ala Pro Tyr Leu Gly Ala Pro Leu Thr Ser
1 5 10

<210> 263
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 263

Arg Pro Arg Gln His Ala Thr Val Gln Asp
1 5 10

<210> 264
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 264

Ser Pro Gln His His Lys Phe Val Gln Asp
1 5 10

<210> 265
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 265

Arg Pro Arg Arg Leu Trp Thr Thr Gln Glu
1 5 10

<210> 266
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 266

Pro Pro Arg Ile His Glu Thr Thr Gln Asp
1 5 10

<210> 267
<211> 14
<212> PRT
<213> hepatitis C virus

<400> 267

Thr Ile Ser Tyr Ala Asn Gly Ser Gly Pro Ser Asp Asp Lys
1 5 10

<210> 268
<211> 19
<212> PRT
<213> hepatitis C virus

<400> 268

Ser Arg Arg Gln Pro Ile Pro Arg Ala Arg Arg Thr Glu Gly Arg Ser
1 5 10 15

Trp Ala Gln

<210> 269
<211> 1443
<212> DNA
<213> hepatitis C virus

<400> 269

accatcacca ccggagcttc tatcacatac tccacttacg gcaagttcct tgctgatgga 60
gggtgttcag gcggcgcgta tgacgtgac atagtgcgac agtgccattc ccaggacgcc 120
accaccattc ttgggatagg cactgtcctt gaccaggcag agacggctgg agctaggctc 180
gtcgtcttgg ccacggccac ccctcccggc agtgtgacaa cgccccaccc caacatcgag 240
gaagtggccc tgcctcagga gggggagggt cccttctacg gcagagccat tccccttgct 300
tttataaagg gtggtaggca tctcatcttc tgccattcca agaaaaaatg tgatgaactc 360
gccaagcaac tgaccagcct gggcgtgaac gccgtggcat attatagagg tctagacgtc 420
gccgtcatcc ccacagcagg agacgtggtc gtgtgcagca ccgacgcgct catgacggga 480
ttcaccggcg actttgattc tgtcatagac tgcaactccg ccgtcactca gacggtggac 540
ttcagtctgg atcccacttt taccattgag actaccacag tgccccagga cgcagtgtcc 600
agaagccagc gtaggggccc cacggggaga ggtaggcacg gcatataccg gtatgtctcg 660
gctggagaga gaccgtctga catgttcgac tccgtggtgc tctgtgagtg ctacgatgcc 720
ggatgtgcgt ggtatgatct gactcctgcc gagactaccg tgagggttgcg cgcttacata 780
aacacccccg ggctccctgt ctgtcaggac catttggaat tctgggaggg ggtgttcacg 840
gggctcacta acatcgacgc tcacatgctg tcacagacca aacaggggtg ggagaatttc 900
ccataccttg tagcgtacca agcaacagtc tgtgttcgcg cgaaagcgcc cccccccagc 960
tgggacacaa tgtggaaatg catgctccgt ctcaaaccga ctttaactgg ccctactccc 1020
ctcttgtaga ggctggggcc cgtccagaat gagatcacac tgacgcaccc catcaccaag 1080

tacattatgg cttgcatgtc tgcggacttg gaggtcatta ccagcacttg ggttctggtg 1140
 gggggcggtt tggcggccct ggcggcctac tgcttgacgg tgggttcggt agccatagtc 1200
 ggtaggatca tcctctcttg gaaacctgcc atcattcccg atagggaggc attataccag 1260
 caatttgatg agatggagga gtgctcggcc tcgttgccct atatggacga gacacgtgcc 1320
 attgccggac aattcaaaga gaaagtgtc ggcttcatca gcacgaccgg ccagaaggct 1380
 gaaactctga agccggcagc cacgtctgtg tggaacaagg ctgagcagtt ctggggccaca 1440
 tac 1443

<210> 270
 <211> 481
 <212> PRT
 <213> hepatitis C virus

<400> 270

Thr Ile Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr Gly Lys Phe
 1 5 10 15

Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Val Ile Ile Cys
 20 25 30

Asp Glu Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly Ile Gly Thr
 35 40 45

Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala
 50 55 60

Thr Ala Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro Asn Ile Glu
 65 70 75 80

Glu Val Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr Gly Arg Ala
 85 90 95

Ile Pro Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile Phe Cys His
 100 105 110

Ser Lys Lys Lys Cys Asp Glu Leu Ala Lys Gln Leu Thr Ser Leu Gly
 115 120 125

Val Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ala Val Ile Pro
 130 135 140

Thr Ala Gly Asp Val Val Val Cys Ser Thr Asp Ala Leu Met Thr Gly
145 150 155 160

Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Ser Ala Val Thr
165 170 175

Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr
180 185 190

Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg Gly Arg Thr
195 200 205

Gly Arg Gly Arg His Gly Ile Tyr Arg Tyr Val Ser Ala Gly Glu Arg
210 215 220

Pro Ser Asp Met Phe Asp Ser Val Val Leu Cys Glu Cys Tyr Asp Ala
225 230 235 240

Gly Cys Ala Trp Tyr Asp Leu Thr Pro Ala Glu Thr Thr Val Arg Leu
245 250 255

Arg Ala Tyr Ile Asn Thr Pro Gly Leu Pro Val Cys Gln Asp His Leu
260 265 270

Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr Asn Ile Asp Ala His
275 280 285

Met Leu Ser Gln Thr Lys Gln Gly Gly Glu Asn Phe Pro Tyr Leu Val
290 295 300

Ala Tyr Gln Ala Thr Val Cys Val Arg Ala Lys Ala Pro Pro Pro Ser
305 310 315 320

Trp Asp Thr Met Trp Lys Cys Met Leu Arg Leu Lys Pro Thr Leu Thr
325 330 335

Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln Asn Glu Ile
340 345 350

Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met Ser Ala
355 360 365

Asp Leu Glu Val Ile Thr Ser Thr Trp Val Leu Val Gly Gly Val Val
370 375 380

Ala Ala Leu Ala Ala Tyr Cys Leu Thr Val Gly Ser Val Ala Ile Val
385 390 395 400

Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu
405 410 415

Ala Leu Tyr Gln Gln Phe Asp Glu Met Glu Glu Cys Ser Ala Ser Leu
420 425 430

Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln Phe Lys Glu Lys
435 440 445

Val Leu Gly Phe Ile Ser Thr Thr Gly Gln Lys Ala Glu Thr Leu Lys
450 455 460

Pro Ala Ala Thr Ser Val Trp Asn Lys Ala Glu Gln Phe Trp Ala Thr
465 470 475 480

Tyr

<210> 271
<211> 5
<212> PRT
<213> hepatitis C virus

<400> 271

Leu Glu Trp Arg Asn
1 5

<210> 272
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 272

Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg
1 5 10 15

Glu Phe Asp Glu
20

<210> 273
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 273
Ser Gln His Leu Pro Tyr Ile Glu Gln Gly Met Met Leu Ala Glu Gln
1 5 10 15

Phe Lys Gln Lys
20

<210> 274
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 274
Leu Ala Glu Gln Phe Lys Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala
1 5 10 15

Ser Arg Gln Ala
20

<210> 275
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 275
Leu Ser Gly Arg Pro Ala Val Ile Pro Asp Arg Glu Val Leu Tyr Gln
1 5 10 15

Glu Phe Asp Glu
20

<210> 276
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 276
Ala Ser His Leu Pro Tyr Ile Glu Gln Gly Met Gln Leu Ala Glu Gln
1 5 10 15

Phe Lys Gln Lys
20

<210> 277
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 277

Leu Ala Glu Gln Phe Lys Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala
1 5 10 15

Thr Lys Gln Ala
20

<210> 278
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 278

Val Asn Gln Arg Ala Val Val Ala Pro Asp Lys Glu Val Leu Tyr Glu
1 5 10 15

Ala Phe Asp Glu
20

<210> 279
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 279

Ala Ser Arg Ala Ala Leu Ile Glu Gly Gln Arg Ile Ala Glu Met
1 5 10 15

Leu Lys Ser Lys
20

<210> 280
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 280

Ile Ala Glu Met Leu Lys Ser Lys Ile Gln Gly Leu Leu Gln Gln Ala

1 5 10 15

Ser Lys Gln Ala
20

<210> 281
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 281

Leu Asn Asp Arg Val Val Val Ala Pro Asp Lys Glu Ile Leu Tyr Glu
1 5 10 15

Ala Phe Asp Glu
20

<210> 282
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 282

Ala Ser Lys Ala Ala Leu Ile Glu Glu Gly Gln Arg Met Ala Glu Met
1 5 10 15

Leu Lys Ser Lys
20

<210> 283
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 283

Met Ala Glu Met Leu Lys Ser Lys Ile Gln Gly Leu Leu Gln Gln Ala
1 5 10 15

Thr Arg Gln Ala
20

<210> 284
<211> 20
<212> PRT
<213> hepatitis C virus

<400> 284

Ala Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln
1 5 10 15

Phe Lys Glu Lys
20